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Career Decision-Making Self-Efficacy: Examining the Effects of Career Choice, Education, and Work Experience of Entrepreneurs

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Career Decision-Making Self-Efficacy: Examining the Effects of
Career Choice, Education, and Work Experience of Entrepreneurs

Career Decision-Making Self-Efficacy: Examining the Effects of
Career Choice, Education, and Work Experience of Entrepreneurs

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Education in Human Resource and Workforce Development Education

by

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ABSTRACT

Prior research on the relationship between self-efficacy and career decision making is inconclusive because of the lack of theoretical background and causal conclusions. More research is needed to investigate how the educational background, career choice, and work experience, of entrepreneurs, influences their career decision-making self-efficacy beliefs and how those beliefs effect their decision to become entrepreneurs. The purpose of this study was to investigate to what extent career choice, education, and work experience related to the level of career decision-making self-efficacy among participants in the Ventureprise business incubation program who are or are intending to become entrepreneurs. The education and longevity of work experience were examined. The objectives of this study were to investigate to what extent the level of career decision-making self-efficacy was affected by career choice in entrepreneurship, education level completed, and longevity of work experience. The results of the study indicated that, although there were observed increases in levels of career decision-making self-efficacy among those who chose entrepreneurship as a career, the results were not statistically significant. Similarly, increases in career decision-making self-efficacy were observed among participants with higher formal education levels. Finally, no correlation existed between years of work experience and career decision-making self-efficacy beliefs among participants. Findings were inconsistent with prior research, and recommendations for further research are made based on limitations of the current study.

ACKNOWLEDGEMENTS

I give thanks first to my Chair, Dr. Claretha Hughes, for her diligence, patience, and encouragement. Her unrelenting attention and support were essential to keeping me on task toward project completion. I also appreciate my dissertation committee for their assistance and for offering their time during my studies and dissertation. The faculty of the College of Education and Health Professions has contributed steadily to my success in the Human Resources and Workforce Development Education program, and I appreciate their efforts. To my classmates over the past several years, I have valued our collaboration.

Self-efficacy involves the belief in one's own abilities to complete tasks. It is no coincidence that I chose to study this topic, as my own efficacy has wavered dramatically over the last four years. Yet, through the support of my dissertation chair, committee, family, and friends, I was able to suppress insecurities and complete the program. Many individuals have contributed to the completion of this paper through their encouragement and personal guidance. I acknowledge those who have influenced my success and tip my hat to each of you.

In one of my favorite movies, the main character, Forrest Gump, was quoted:

For no particular reason I just kept on going. I ran clear to the ocean. And, when I got there, I figured, since I'd gone this far, I might as well turn around, just keep on going. When I got to another ocean, I figured, since I'd gone this far, I might as well just turn back, keep right on going.

Forrest ran and wasn't distracted by the destination or the miles in front of him. He stayed focused on the task and kept his eyes forward, except when he slowed to appreciate the scenery. I'm inspired by Forrest and I have been running, too, trying not to be distracted by what was ahead. While this run is near completion, I've appreciated the scenery and look forward to the next journey.

DEDICATION

This work is dedicated to my husband and soul mate, Chad, for his unrelenting support. When I got frustrated, he listened. When I felt stressed, he brought home wine. When life's distractions took me off course, he brought me back. When I wanted to quit, he kept pushing. Simply stated, this would not be possible without him. He was my rock when I fell apart, my superman when I needed rescuing, and my cheerleader always.

Additional dedication goes to my children. They were very young when I started this journey and only recently began to understand that Mommy goes to school, too, and why. Through their eyes, I am a confident, intelligent woman who is capable of anything. In moments of doubt, I received hugs and was often told, "You can do anything, Mommy."

To my family who has always believed in me, I also dedicate this work to you. You taught me the value of hard work and so many other things that I will never take for granted. I've been fortunate to grow up in Arkansas surrounded by the most loving, kind and supportive people anyone can ask for. I feel your love and support every day, no matter where we are.

Finally, I dedicate this accomplishment to my late mother. Her spirit lives on in her legacy as an educator, a mother, and as one of those special, infectious personalities that no one who has met her can ever forget. I miss her friendship, her unrelenting enthusiasm for life, and her guidance every day.

TABLE OF CONTENTS

CHAPTER I: INTRODUCTION	1
<i>Career Development and Intent</i>	<i>2</i>
<i>Self-Efficacy and Performance.....</i>	<i>3</i>
<i>Self-Efficacy, Career Choice, and Career Success</i>	<i>4</i>
<i>Self-Efficacy and Cognition.....</i>	<i>5</i>
<i>Entrepreneurial Personality and Behavior</i>	<i>6</i>
<i>Self-Efficacy and Entrepreneurs</i>	<i>7</i>
<i>Problem Statement</i>	<i>10</i>
<i>Purpose of the Study.....</i>	<i>11</i>
<i>Research Questions</i>	<i>11</i>
<i>Theoretical Framework.....</i>	<i>11</i>
<i>Importance of the Study.....</i>	<i>15</i>
<i>Definitions of Key Terms.....</i>	<i>16</i>
CHAPTER II: LITERATURE REVIEW	18
<i>Introduction.....</i>	<i>Error! Bookmark not defined.</i>
<i>Defining Entrepreneurs</i>	<i>19</i>
<i>Education and Self-Efficacy</i>	<i>21</i>
<i>Work Experience and Self-Efficacy.....</i>	<i>24</i>
<i>Social Influences of Entrepreneurs during Education</i>	<i>27</i>
<i>Social Influences of Entrepreneurs at Work.....</i>	<i>28</i>
<i>Processes and Behaviors of Workers Who Became Entrepreneurs</i>	<i>29</i>
<i>Career Choice and Entrepreneurial Decision-Making.....</i>	<i>30</i>
CHAPTER III: METHODOLOGY	31
<i>Purpose of the Study.....</i>	<i>31</i>
<i>Research Questions</i>	<i>32</i>
<i>Research Design.....</i>	<i>32</i>
<i>Research Methodology.....</i>	<i>33</i>
<i>Target Population.....</i>	<i>34</i>
<i>Sampling Method.....</i>	<i>35</i>
<i>Instrumentation</i>	<i>35</i>

<i>Instrument Reliability</i>	37
<i>Data Collection Procedures</i>	37
<i>Data Analysis</i>	40
CHAPTER IV: RESULTS	43
<i>Instrument Reliability Analysis</i>	43
<i>Missing Data</i>	44
<i>Research Question Results</i>	50
<i>Research Question 1: To what extent is the level of career decision-making self-efficacy different for individuals who intentionally chose entrepreneurship as a career compared to those who did not intentionally become entrepreneurs?</i>	50
<i>Research Question 2: To what extent is the level of career decision-making self-efficacy different for entrepreneurs and potential entrepreneurs with different educational levels?</i>	54
<i>Research Question 3: To what extent is career decision-making self-efficacy impacted by the work experience (i.e. years of experience) among entrepreneurs and potential entrepreneurs?</i>	59
CHAPTER V: DISCUSSION, CONCLUSIONS, AND IMPLICATIONS	62
<i>Research Question 1: To what extent is the level of career decision-making self-efficacy different for individuals who intentionally chose entrepreneurship as a career compared to those who did not intentionally become entrepreneurs?</i>	69
<i>Research Question 2: To what extent is the level of career decision-making self-efficacy different for entrepreneurs and potential entrepreneurs with different educational levels?</i>	72
<i>Research Question 3: To what extent is career decision-making self-efficacy impacted by the work experience (i.e. years of experience) among entrepreneurs and potential entrepreneurs?</i>	75
<i>Recommendations and Future Research</i>	77
<i>Applicability of the CDMSE-SF Scale</i>	83
REFERENCES	86
APPENDIX A: DEMOGRAPHIC SURVEY ITEMS	92
APPENDIX B: INFORMED CONSENT LETTER	94
APPENDIX C: CDMSE-SF SCALE DISCLOSURE	95
APPENDIX D: CDMSE-SF SCALE SAMPLE	96
APPENDIX E: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER	97

APPENDIX F: LETTER OF PERMISSION TO USE CDMSE-SF SCALE.....	98
APPENDIX G: ONLINE USAGE AGREEMENT FOR CDMSE-SF SCALE	99
APPENDIX H: INVOICE FOR PURCHASE OF CDMSE-SF SCALE USAGE	101
APPENDIX I: REVIEW OF SURVEY BY MIND GARDEN	102
APPENDIX J: RESUME	104

LIST OF TABLES

Table 1: <i>Summary of Research Questions Addressed by the Literature Review</i>	18
Table 2: <i>Summary of Research Questions Addressed by Survey Items</i>	37
Table 3: <i>Variables and Test Measures</i>	41
Table 4: <i>CDMSE-SF Subscales and Cronbach Coefficient Alpha</i>	44
Table 5: <i>Gender of Entrepreneurs</i>	46
Table 6: <i>Ethnic Groups of Entrepreneurs</i>	47
Table 7: <i>Age Groups of Entrepreneurs</i>	47
Table 8: <i>Entrepreneur Choice to Become an Entrepreneur</i>	48
Table 9: <i>Entrepreneurs' Highest Education Level Completed (N=69)</i>	48
Table 10: <i>Entrepreneurs' Years of Work Experience (N=69)</i>	49
Table 11: <i>Comparison of CDMSE-SF Scale Overall Scores for Entrepreneurial Choice</i>	50
Table 12: <i>Comparison of CDMSE-SF Subscale Mean Scores</i>	52
Table 13: <i>T-Test Results of CDMSE-SF Scale Scores for Choice to Become an Entrepreneur</i> ...	53
Table 14: <i>Overall CDMSE-SF Scores by Educational Level (N=62)</i>	54
Table 15: <i>Analysis of Variance - CDMSE-SF Subscale Mean Scores by Educational Level</i>	55
Table 16: <i>Goal Selection Subscale Mean Scores by Educational Levels (N=62)</i>	56
Table 17: <i>Planning Subscale Mean Subscale Scores by Educational Level (N=62)</i>	57
Table 18: <i>Self-Appraisal Subscale Mean Subscale Scores by Educational Level (N=61)</i>	57
Table 19: <i>Occupational Information Subscale Mean Subscale Scores by Educational Level</i>	58
Table 20: <i>Problem Solving Subscale Mean Subscale Scores by Educational Level (N=61)</i>	58
Table 21: <i>CDMSE-SF Scale Scores by Years of Work Experience (N=62)</i>	60
Table 22: <i>Relationship between Years of Work Experience and CDMSE-SF Scale Scores</i>	61

CHAPTER I: INTRODUCTION

A large number of individuals have chosen entrepreneurship as a career without knowing what it takes to be successful. Entrepreneurs are defined as individuals who decide to take advantage of perceived opportunities based on judgment and risk assessment others don't see (Formaini, 2001). Entrepreneurs are opportunists and contribute through renewal functions that pervade market economies, providing innovations that lead to technological change and productivity expansion (Kuratko, 2005). Failure often occurs in start-up, entrepreneurial business (Caliendo & Kritikos, 2008). Since December 2007, new business start-ups have sharply declined and the rate of new business failure has increased (U.S. Bureau of Labor Statistics, 2013). Failure for entrepreneurs has been costly due to loss of public or private money invested and resulting psychological damages (Caliendo & Kritikos, 2008). Because of these costs, it is important to understand the decision-making process of entrepreneurs and the intermediating factors that influence entrepreneurial decision making.

Research on the decision-making processes and personal characteristics that led individuals to choose entrepreneurship as a career has been inconsistent. Research has lacked theoretical background, and has resulted in an extensive list of possible causes with no real conclusions (Zhao, Seibert & Hills, 2005). The belief that individuals have the ability to be successful as entrepreneurs, also known as entrepreneurial self-efficacy, influences their decision to become entrepreneurs. Furthermore, less is known about the source of self-efficacy beliefs that lead to certain behaviors than the consequences of self-efficacy beliefs (Forbes, 2005). More research is needed on the impact of self-efficacy on the career decision-making process of individuals who choose entrepreneurship as a career and on the factors that influence self-efficacy beliefs. Because there is conflicting literature with regards to the external factors and

their impact on self-efficacy and entrepreneurship, this study sought to examine specific factors that impact career decision-making self-efficacy by obtaining the data from the entrepreneurs themselves.

Career Development and Intent

To understand factors that influence the decision to become an entrepreneur, it is important to understand the career decision-making process. Taylor and Betz (1983) investigated groups of college students to observe the influence of self-efficacy on career decision-making. Their research applied Bandura's (1977) self-efficacy theory to career decision making. Using the career decision-making self-efficacy (CDMSE) model, research revealed that college students' career decision-making self-efficacy correlated with their decisiveness regarding career decisions. Students with high levels of self-efficacy had little or no issue making career decisions. In contrast, students showing a lack of structure or confidence had difficulty making career decisions or avoided such decisions (Taylor & Betz, 1983). This study was significant because it revealed self-efficacy as having an influence on career choice and provided a foundation for interventions that would encourage higher levels of self-efficacy.

Cassar (2007) investigated the reasons individuals choose entrepreneurship as a career. While some recall bias existed, research revealed that financial success was an important reason self-employment was chosen as a career. Interestingly, nascent entrepreneurs sought independence in work, while post start-up entrepreneurs demonstrated negative feelings toward independence. Overall, reasons for choosing self-employment as a career path varied as the entrepreneur progressed in the business venture, from start up to implementation.

Ahmed, Aamir and Ijaz (2011) examined self-efficacy as a moderator of external influences and entrepreneurial intentions. Their research revealed that external factors and self-

efficacy had insignificant impacts on individuals choosing entrepreneurship as a career. Social factors such as family support influenced the decision to become an entrepreneur in a positive way. The research was limited because of its sample size, but the results suggested that self-efficacy was not always a motivator for career intention.

Zhao et al. (2005) measured self-efficacy as a contributor to students choosing entrepreneurship as a career. The research also evaluated formal learning programs that prepared students for entrepreneurship and found significant positive impact of the curriculum on entrepreneurial self-efficacy. Significant to the current study, Zhao et al. (2005) identified previous entrepreneurial work experience as being positively related to entrepreneurial self-efficacy; however, the population of the current study was primarily practicing entrepreneurs or those who self-identify as wanting to become entrepreneurs from various educational and work backgrounds. They may or may not be students.

Social and external factors were also determined to be significant in the decision-making process leading to entrepreneurship (Ahmed et al., 2011; Cassar, 2007). Zhao et al. (2005) noted specific links between the education and work experience of entrepreneurs and their career decision-making self-efficacy beliefs. The current research further examines the extent to which education, career choice, and work experience impact career decision-making self-efficacy of active and potential entrepreneurs.

Self-Efficacy and Performance

Self-efficacy has been observed to correlate with individuals' task performance, persistence, entrepreneurial attitudes, and general success of entrepreneurial tasks (Bandura, 2006; Lent, Brown & Hackett, 1994). Tyszka, Cieslik, Domurat, and Macko (2012) determined that entrepreneurs showed higher levels of self-efficacy than non-entrepreneurs. However, the

researchers observed these higher levels of self-efficacy only among entrepreneurs who were motivated by the identification of a good opportunity, but not among those who became entrepreneurs out of necessity. C. Neck, H. Neck, Manz and Godwin (1999) examined entrepreneurship as it relates to self-efficacy and the factors that lead to the perceptions of self-efficacy. Using the theory of Thought Self-Leadership, Neck et al. (1999) developed a model that explained how Thought Self-Leadership strategies could be used to strengthen entrepreneurial self-efficacy.

Self-Efficacy, Career Choice, and Career Success

Self-efficacy has shown to be directly related to career-decision making among college students. Specifically, career indecision is more common among students with less self-efficacy and students with higher levels of self-efficacy were more secure in their career intent (Taylor & Betz, 1983). Lent, Brown, and Hackett (2000) put forward the idea that individuals do not choose a career based on potential financial benefits. Individuals also consider the barriers they'll encounter while pursuing that career. In these situations, self-efficacy regarding the occupation's needed skills becomes critical. Two individuals with similar career interests may perceive barriers to that career in very different ways because of their varied levels of self-efficacy beliefs.

Baron (2004) investigated why some individuals pursued entrepreneurship as a career and others didn't. While recognizing motivational factors as influencing entrepreneurship, Baron concluded that it was cognitive factors that played the most important role. He did not observe motivational factors, other than cognition, as having significant influences on entrepreneurship as a career choice. Entrepreneurial self-efficacy is relevant to career choice

because it can affect individuals' decisions to create new opportunities, develop new venture strategies and the potential way they will manage those ventures in the future (Forbes, 2005).

In later research, Hmieleski and Baron (2008) examined how self-efficacy impacted an entrepreneur's optimism and ability to adapt to different environments. An interaction was observed between self-efficacy, optimism, dynamism, and firm performance. High entrepreneurial self-efficacy combined with moderate levels of optimism resulted in high firm performance. High self-efficacy combined with high levels of optimism resulted in lower firm performance. Results revealed that even entrepreneurs with high self-efficacy should monitor levels of optimism.

Hmieleski and Corbett (2008) investigated the relationship between entrepreneurial self-efficacy and improvisation among small organization decision makers. Their research concluded that managers with low self-efficacy who relied on improvisation were less likely to succeed in business than those with high levels of self-efficacy.

Self-Efficacy and Cognition

Barbosa, Gerhardt and Kickul (2007) examined the effects of cognitive style and risk preference on entrepreneurial self-efficacy and entrepreneurial intentions. Measuring four task-specific types of efficacy (Opportunity-Identification, Relationship, Managerial and Tolerance), Barbosa et al. investigated psychology and entrepreneurship. Their findings concluded that cognitive style alone did not contribute to strong entrepreneurial intentions. Specifically, their findings were inconclusive when trying to determine if intuition was an antecedent or a consequence of entrepreneurial behavior. In addition to the inconclusive results involving intuition, their findings were mixed in attempting to show a relationship between cognitive style and entrepreneurial self-efficacy. Their findings did not support the idea that individuals with

intuitive cognitive styles would have higher levels of self-efficacy early in the entrepreneurial process during opportunity recognition. The results of their research indicated the possibility that other motivational factors, such as education or work experience, may explain variances in entrepreneurial self-efficacy.

Entrepreneurial Personality and Behavior

Early research by Schumpeter (1934) suggested entrepreneurs have the ability to identify and exploit a new opportunity. An entrepreneur, as defined by Amabile (1996), is one who pursues a new idea or identifies a new opportunity for profitability in a service or product. Expanding on this idea, Formaini (2001) defined an entrepreneur as an individual, rather than a group, who perceives market opportunity and establishes a way to exploit the opportunity for monetary gain. These definitions of an entrepreneur are enhanced by McClelland's (2003) suggestion that the need for achievement was the most significant personality characteristic among entrepreneurs. Research has revealed the dynamic nature of the entrepreneurial personality, including increased improvisational abilities (Liptak, 2008; Hmieleski & Corbett, 2008). Williams and Shaw (2010) identified characteristics of entrepreneurs such as the willingness to take risks, organize tasks, and function using limited resources. Alvarez-Herranz, Martinez-Ruiz and Valencia De Lara (2011) considered the thought processes of the entrepreneurs and what motivated them to choose entrepreneurship in difficult economic climate. The pursuit of new opportunities, development of new products, or the exploitation of market opportunities all coalesce to help define the behaviors of an entrepreneur.

Entrepreneurs continually change their behaviors to adapt to various stages of the business development and growth process (Elmuti, Khoury, and Abdul-Rahim, 2011). Liptak (2008) proposed that success in entrepreneurship stemmed from characteristics such as tolerance

for risk, resourcefulness, and adaptability and that these traits make individuals more likely to seek entrepreneurship as a career. While research into the personality of entrepreneurs is available, there remains an opportunity to investigate the influence of motivational factors, such as education and work experience.

Self-Efficacy and Entrepreneurs

Factors that motivate entrepreneurs to create new ventures, manage processes, and invest into new enterprises have also been examined (Chen, Green & Crick, 1998; Knight, 1921). In early research, Knight (1921) recognized that confidence was significant since entrepreneurs often had to project potential success and failure with uncertain situations and unpredictable variables. Knight's concept of confidence was a predecessor for the study of self-efficacy. Entrepreneurial self-efficacy was later defined as an individual's confidence in their ability to successfully perform entrepreneurial roles and tasks (Chen et al., 1988; Zhao et al., 2005). Forbes (2005) argued that entrepreneurial self-efficacy was critical to entrepreneurship literature because it affected individuals' willingness to participate in entrepreneurship and maintained significance for those already involved in new business ventures. Bandura (2006) identified self-efficacy as one important characteristic that makes entrepreneurs and organizations more resilient in the face of uncertainty, change, and product development.

More recently, Bandura (2012) investigated the theoretical, methodological, and analytical knowledge on the role self-efficacy plays in human development and adaptation to change. Bandura recognized that levels of efficacy were varied across facets within an activity domain which made measuring self-efficacy difficult with a single instrument. Recognizing that human beings exist in difference spheres of activity, Bandura theorized that people would differ in areas of self-efficacy and the level of which they would achieve.

Taylor & Betz (1983) explored the impact of self-efficacy on individuals experiencing career choice indecision. Their study was the first use of the Career Decision-Making Self-Efficacy Scale (CDMSE scale) and established the CDMSE scale as a reliable measure of self-efficacy. Their work also provided a foundation for research on predecessors of career indecision and ways to intervene with career indecision.

Farmer, Yao and Kung-Mcintyre (2011) found correlations between an entrepreneur's level of success toward an intended behavior and the level of self-efficacy, or confidence in their ability to achieve success. The self-efficacy of entrepreneurs, often measured as entrepreneurial self-efficacy (ESE), has been identified as a key characteristic of entrepreneurs (Brandstatter, 2011; Wilson, Kickul, & Marlino, 2007). Bandura (1977) identified one key to self-efficacy as an individual's conviction toward a desired outcome. Chen, Greene and Crick (1998) defined entrepreneurial self-efficacy is an individual's confidence in his or her own ability to complete tasks necessary to ensure the success of new business start-ups. Self-efficacy is also influenced by performance accomplishments, vicarious experiences, and external motivational factors such as education and work experience (Forbes, 2005). Zhao et al. (2005) found that education and work experience are characteristics that are dynamic, easily changed, and have stronger influences on self-efficacy and entrepreneurial intention than other factors less likely to change such as risk propensity and gender. Other research has established that education increased entrepreneurial management skill and the overall profitability of the business venture (Arenius & De Clercq, 2005). Chen et al. (1998) suggested that entrepreneurial self-efficacy could be improved and training institutions could intervene to help develop self-efficacy as an entrepreneurial skill. In addition to education, previous work experience influences entrepreneur success as individuals learn from their successes and failures on the job. Prior work experience

molds knowledge base, cognition, and decision-making skills (Baron, 2004; Mitchell et al., 2004).

A relationship has been identified between levels of entrepreneurial self-efficacy and business venture success. Chen et al. (1998) suggested individuals with low self-efficacy were less likely to seek entrepreneurship as a career and, if they became entrepreneurs, they were less likely to take action to grow and sustain the business. In a more recent study conducted after the beginning of the 2007 U.S. Recession, Hayek (2012) also observed a link between self-efficacy beliefs and business success. Interestingly, however, Hayek concluded that there is a possibility for nascent entrepreneurs to be overly confident in their own abilities, resulting in unrealistic outcome expectations for the venture with possibly damaging results. These similar yet contrasting viewpoints (Chen et al., 1998; Hayek, 2012) revealed a need for a better understanding of how entrepreneurs perceive their environment and abilities. This understanding has implications for educators and trainers to know when to stimulate and when to caution future entrepreneurs (Hayek, 2012).

Entrepreneurial motivation has been described as the socio-psychological drive among individuals that leads to economic development (Kamaraj, Jayakumar, and Kathiravan, 2012). Examples of motivational factors that encourage and sustain entrepreneurial action include having a talent for innovation, possessing a need for independence, and the desire for recognition and financial success (Tyszka et al, 2011). Prior knowledge and training play crucial roles in motivating entrepreneurs.

Education and training have been associated with the development of analytical skills, information processing, and other factors that contributed to the ability to recognize and develop new business opportunities (Alvarez-Herranz et al., 2011). Betz & Luzzo (1996) determined

from their research that entrepreneurs who success in activities prior to starting new tasks may demonstrate higher levels of self-efficacy while failure in experiences can lower levels of self-efficacy.

Determining the motivational factors that motivate entrepreneurial thought processes is useful for training individuals with entrepreneurial intentions and ensuring proper skill development. Research suggested that entrepreneurial self-efficacy is increased through training and formal education, and the more work experience and education an entrepreneur possesses, the more entrepreneurial activities will be carried out that predicts the overall success of the business venture (Arenius and De Clercq, 2005). Entrepreneurial self-efficacy is important because it has shown to be a related the nascent entrepreneur's perceived ability to seek out new opportunities and secure resources to explore those opportunities (McGee, Peterson, Mueller & Sequeira, 2009).

Problem Statement

Prior research on the relationship between self-efficacy and career decision making is inconclusive because of the lack of theoretical background and causal conclusions (Zhao et al., 2005); thus, more research is needed to investigate how the educational background, career choice, and work experience of entrepreneurs influences their career decision-making self-efficacy beliefs and how those beliefs effect their decision to become entrepreneurs.

Purpose of the Study

The purpose of this study was to investigate to what extent the career choice, education, and work experience relates to the level of career decision-making self-efficacy among participants in Ventureprise business incubation program who are or are intending to become entrepreneurs. The education and longevity of work experience were examined. The level of self-efficacy was measured using Betz, Klein and Taylor's (1996) Career Decision-Making Self-Efficacy scale in its short form (CDMSE-SF scale).

Research Questions

In an effort to focus on career decision-making self-efficacy among entrepreneurs and the factors that may influence career decision-making self-efficacy and career expectations, these specific research questions were proposed:

1. To what extent is the level of career decision-making self-efficacy different for individuals who intentionally chose entrepreneurship as a career compared to those who did not intentionally become entrepreneurs?
2. To what extent is the level of career decision-making self-efficacy different for entrepreneurs and potential entrepreneurs with different educational levels?
3. To what extent is career decision-making self-efficacy impacted by the work experience (i.e. years of experience) among entrepreneurs and potential entrepreneurs?

Theoretical Framework

Social Cognitive Career Theory (SCCT) is derived from Albert Bandura's Social Cognitive Theory (1986). Bandura's Social Cognitive Theory assumes that learners can gain information from watching others and can make decisions about what behavior to employ; that

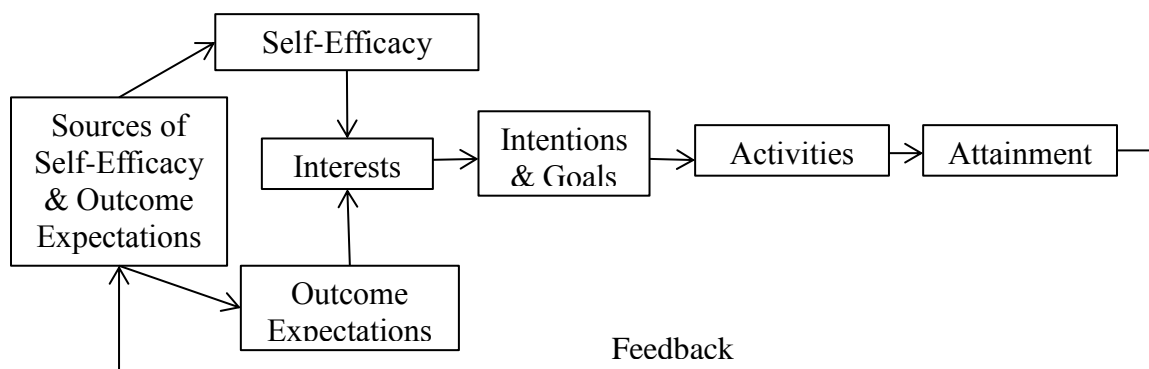
the relationships between behaviors, the environment, and personal events explain learning; and that learning is the acquisition of symbolic representations that in the form of codes.

Self-efficacy is one aspect of Social Cognitive Theory that is central to the current research. Self-efficacy is one's beliefs in their capabilities to execute actions to attain goals. These beliefs can motivate individuals and can impact personal development. With origins in social cognitive theory, self-efficacy is an individual's perceived ability to successfully accomplish established goals (Bandura, 1977). Perceived self-efficacy is a belief that a person can organize and execute the actions necessary to produce particular outcomes. Efficacy beliefs are instrumental in the activities and situations and the direction of personal development (See Figure 1).

Figure 1 depicts the perceived sources of self-efficacy and outcome expectations in the context of the current study as adapted based on Bandura's (1977) theory. Sources of self-efficacy and outcome expectations contribute to the individual's self-efficacy and outcome expectations that both lead to interests. Interests, therefore, lead to intentions and goals, and subsequently, to the activities that lead to attainment of goals. The feedback from attainment becomes a future source of self-efficacy and outcome expectations for future projects or goals.

Figure 1

Sources of Self-Efficacy and Outcome Expectations



Perceived self-efficacy also involves self-appraisal and it involves more than simply knowing what to do. Regarding sources of self-efficacy beliefs, four types of influence contribute to individuals' beliefs about their self-efficacy. They are mastery experiences, vicarious experiences, social persuasion, and physiological emotional states (Bandura, 1995). Extensive research has been conducted to establish the relationship between entrepreneurial success and high levels of self-efficacy. (Chen et al., 1998; Hayek, 2012; Zhao et al., 2005).

Derived from Bandura's (1986) Social Cognitive Theory, SCCT involves three foundational aspects of career development including self-efficacy, outcomes expectations, and personal goal development. When career self-efficacy is viewed within the broader concept of social cognitive career theory, a link exists between career development and social variables. Entrepreneurs who are confident in their abilities based on their educational preparation and work experience are likely to be successful in new business ventures (Baum & Locke, 2004). SCCT examines the impact of social variables such as race, gender, and other demographics on cognitive variables such as self-efficacy and outcome expectations. It is the relationships between the underlying characteristics of an entrepreneur and the cognitive outcome variables that make SCCT relevant to the present research.

Social Cognitive Career Theory (SCCT) is important for the current research because it addresses how past experiences and environmental factors influence self-efficacy among entrepreneurs (Minniti & Bygrave, 2001). According to SCCT, the self-efficacy judgments are manageable and influenced by any of four thought processes. These thought processes include enactive mastery, role experiential learning (modeling), social influence, and self-awareness of psychological state (Zhao et al., 2005). SCCT is a useful theoretical basis to understand the relationships between education and work experience, variables used in the present study, to self-

efficacy among entrepreneurs. Lent et al. (1994) established a link between self-efficacy beliefs and outcome expectations revealing that the higher an individual's self-efficacy, the more likely they are to achieve their goals. Since the current research examined factors that contribute to self-efficacy, SCCT is particularly relevant.

SCCT involves the motivational factors, such as gender, race, ethnicity, and background contextual influences and how these factors contribute to career thought processes (Lent et al., 2000). SCCT focuses on the social influences presented by motivational factors, such as learning experiences, on the thought processes of workers. Career-related self-efficacy is influenced by learning experiences in educational settings and learning experiences from social influences, vicarious learning, and achievement (Thompson & Dahling, 2012). SCCT provides a theoretical framework for workforce education, vocational interests, and vocation-related thought processes making the theory relevant to the present study.

Importance of the Study

The implications of research on self-efficacy as it relates to education and work experience is essential to career counselors, entrepreneurship preparation programs such as business incubators and accelerators, and workforce development educators. Higher levels of self-efficacy have shown to be positively correlated with high levels of job performance and greater chances for success (Balan & Lindsay, 2005). The present research contributed to the growing body of knowledge related to entrepreneurial self-efficacy by identifying the role experience and education have on levels of self-efficacy. The study contributes to entrepreneurship literature by expanding the research on factors that contribute to new venture success and survival.

The research was also important for educators. Identifying potential entrepreneurs who lack education and work experience allows educators to encourage self-efficacy support during training (Barbosa et al., 2007). By designing and conducting entrepreneurship education courses, institutions can train students in critical entrepreneurial skills and also strengthen their entrepreneurial self-efficacy (Chen et al., 1998).

Finally, the current research is important for entrepreneurs seeking training and support resources to help ensure greater chances for success. Freudenberg, Cameron and Brimble (2011) concluded that self-efficacy is not stagnating and entrepreneurs can increase their self-efficacy through socializing with other successful entrepreneurs to model their actions. Entrepreneurs can also seek experiential training to develop their skills. With a greater understanding of factors that influence self-efficacy, entrepreneurs can supplement previous education and work experience with experiences that will increase self-efficacy. Additionally, understanding self-

efficacy and entrepreneurial intentions can assist educators in developing curriculum and pedagogy to support nascent entrepreneurs (Barbosa et al., 2007).

The current research focused on self-efficacy and measured changes in self-efficacy among entrepreneurs based on their educational background, career choice, and the longevity of work experience achieved prior to becoming an entrepreneur. Knowledge of entrepreneurial behavior, including factors that influence self-efficacy, is useful for entrepreneurs, investors, local governments, and educators. These stakeholders can use knowledge of entrepreneurial behavior to identify ways to shape and change the behavior to encourage better outcomes (Priem, Li, & Carr, 2012).

Definitions of Key Terms

Career Decision-Making Self-Efficacy. Career decision-making self-efficacy is an individual's belief about her or his capability to perform tasks related to the career decision-making process (Taylor & Betz, 1983).

Career Decision-Making Self-Efficacy Scale-Short Form (CDMSE-SF scale). Developed by Betz, Klein and Taylor (1996), the CDMSE-SF scale was designed to measure occupational self-efficacy in relation to career-related decision-making processes using 25 items.

Entrepreneur. For the purpose of this research, entrepreneur is an individual who desires to start new business ventures or organizations, particularly as new ideas not currently in existence in the marketplace (Kropp, Lindsay & Shoham, 2008). Entrepreneurs differ from traditional workers through the desire to own their business, reap financial awards from individual effort, and the desire for self-directed work (Entrepreneurial Readiness Inventory Administrator's Guide).

Entrepreneurial Self-Efficacy. Entrepreneurial self-efficacy is the belief in one's own ability to conduct entrepreneurial actions based on an assessment of acquired managerial and technical skills relating to the entrepreneurial venture (Chen et al., 1998).

Entrepreneurship. Entrepreneurship is a field of business that focuses on the creation of something new products, new services, the investigation of new markets or new technologies (Entrepreneurial Readiness Inventory Administrator's Guide. The individuals seeking to work as self-directed business managers also characterize entrepreneurship.

Entrepreneurial Intentions. Entrepreneurial intentions involve the propensity for an individual to develop a business. In the context of the current research, entrepreneurial intentions were investigated among students who intend to develop new business ventures upon college graduation.

Ventureprise. Located on the campus of the University of North Carolina at Charlotte, Ventureprise is an environment established for entrepreneurial start-up ventures that supports entrepreneurial development with a goal of supporting and improving the financial and intellectual growth its participants and the surrounding economy.

CHAPTER II: LITERATURE REVIEW

This chapter will present literature relating to entrepreneurial self-efficacy and how education and experience relate to entrepreneurial self-efficacy. Scholarly books, seminal journal articles, peer-reviewed journals and research documents were reviewed through the University of Arkansas and the University of North Carolina at Charlotte libraries using the online catalog at libinfo.uark.edu and library.uncc.edu, respectively. Databases used to search for information included EBSCO Academic Search Complete, ProQuest Research Library, JSTOR and ProQuest Digital Dissertations. Google Scholar, as provided through the University of Arkansas library website offered additional information for the search of the pertinent literature. Bibliographic and reference listings were accessed from appropriate titles discovered within the review process. Table 1 summarizes the literature review topics that address each research question.

Table 1

Summary of Research Questions Addressed by the Literature Review

Research Question	Literature Review Topics
1	Definition of Entrepreneurship, Self-Efficacy and Recognition of Career Opportunities, Influences on Entrepreneurial Career Choice, Opportunity-Driven Career Choice, Social Factors on Entrepreneurial Career Choice
2	Education and Self-Efficacy, Informal Entrepreneurship Education, Formal Entrepreneurship Education Programs, Undergraduate Entrepreneurship Education Programs, Education and Entrepreneurial Performance, Educational Levels of Entrepreneurs, Entrepreneurship-Focused Education and Self-Efficacy
3	Work Experience and Increased Self-Efficacy, Influence of Past Behavior on Self-Efficacy, Work Experience and Entrepreneurial Career Choice, Type of Work Experience, Work Experience and Initiation of Entrepreneurial Activities

Defining Entrepreneurs

Entrepreneurship is not group-driven, but rather the actions of individuals based on visions, personal judgments and strategies not commonly seen by others in the market (Formaini, 2001). In early definitions, the term “entrepreneur” is a French verb meaning to undertake, attempt or try (Carland, Carland, Hoy, & Boulton, 1988). Mill (1899) refocused the concept of an entrepreneur as a business owner or manager who assumes personal risk in the venture. Edgeworth (1904) explained entrepreneurship in four aspects. First, an entrepreneur is the financier who pays wages to laborers, supplies facilities and provides tools and enjoys the product of such labor. Next, Edgeworth described entrepreneurs as a capitalist seeking profit from a venture. The third aspect of entrepreneurship for Edgeworth was that an entrepreneur is the one who assumes financial risk. Finally, the entrepreneur is the one who enjoys the reward of business ventures.

Similar to Edgeworth’s (1904) definition of an entrepreneur, Turgot explained entrepreneurship as an individual with capital who invests in workers and materials, assumes the risks of the venture and reaps the benefits of success (Tuttle, 1927). Summarized by Tuttle (1927), Francois Quesnay (1694-1774) first identified an entrepreneur as the independent owner of a business. Tuttle further distinguished entrepreneurs from capitalists by defining entrepreneurs as those capitalists who invest money into their own business ventures and maintain autonomy and control over the investment and the business.

Baumol (1968) recognized the elusiveness of one definition or description of entrepreneurship. In Baumol’s description of entrepreneurship, a distinction was made between an entrepreneur and a manager. For Baumol, managers oversaw the ongoing efficiency of business processes while entrepreneurs sought new ideas and implemented them into the

business. Baumol's vision of entrepreneurship focused on innovation and exploration. Baumol explained the entrepreneur as the businessman responsible for locating new ideas and putting them into action while leading and inspiring employees toward the same cause. Baumol further suggested that any innovation, through technology or modification of industry, required entrepreneurial initiative. Baumol recognized a lack of theory relating directly to entrepreneurship and proposed the development of such theory based on the levels of reward and risk entrepreneurs experienced.

John Freeman (1945-2008) was among the first to define entrepreneurship as the creation of new firms which was not the conventional understanding of entrepreneurship at the time of Freeman's research (Engel & Teece, 2012). For Freeman, entrepreneurship meant leadership within the process of innovation, new product creation or new market development. Freeman's image of an entrepreneur was one who created new ventures, managed the processes, and invested capital, time, and expertise to the enterprise (Engel & Teece, 2012).

Domar, Hagen, and Gerschenkron (1968) recognized Baumol's (1968) attempt to structure the concept of entrepreneurship into economic models and theories. However, the research conducted by Domar, Hagen, and Gerschenkron stipulated that if an entrepreneur were able to forecast business' successes or failures, it would be difficult to include them in economic theory. Their research also stipulated that an entrepreneur, if considered in economic models and theories, would more closely fit the definition of a manager. The study of entrepreneurial attitudes and behaviors and the investigation of how work experience and other motivational factors might influence entrepreneurial tendencies were proposed (Domar et al., 1968). The research further stated that a general theory of entrepreneurship was not appropriate and that scholars should try to explain entrepreneurship by integrating it into economic research.

Education and Self-Efficacy

Several studies have investigated the relationship between education and an entrepreneur's ability to recognize and act upon a potential opportunity. Shane (2000) investigated the relationship between previous education and an entrepreneur's ability to discover opportunities. Shane's research discovered that the ability for an entrepreneur to discover a new opportunity was determined by prior knowledge, gained through education, rather than an unusual perceptive ability. Bergh, Thorgren and Wincent (2012) investigated how entrepreneurs in a formal learning network gain knowledge from trusted colleagues and the impact such mutual trust had on their abilities to advance new business opportunities.

The literature reveals several studies that have examined the relationship between different types of education and the self-efficacy of entrepreneurs. Early research was conflicted on findings regarding the educational level of entrepreneurs. Jacobowitz and Vilder (1982) suggested that entrepreneurs were less formally educated than other workers whereas other researchers found that entrepreneurs tended to have higher levels of formal education. Timmons (1994) found no impact of formal education on the likelihood entrepreneurship was chosen as a career. Bergh et al. (2012) determined that entrepreneurs with high self-efficacy may benefit more from formal learning networks and entrepreneurs with low self-efficacy may struggle within formal learning networks, but still benefit from informal educational programs.

Some studies investigated informal education and the influence these programs had on entrepreneurial self-efficacy. A positive relationship existed between trust in learning network participants and the entrepreneurs' capacities to act on business opportunities would be moderated by self-efficacy (Bergh et al., 2012). Also, increased self-efficacy supported an entrepreneur's ability to learn. High self-efficacy increased the likelihood entrepreneurs would

seek out business opportunities, tolerate risk, and make opportunities marketable (Bergh et al., 2012). To test this idea the researchers sampled entrepreneurs from various enterprises participating in formal government-sponsored learning networks. Self-efficacy was measured using a seven-item self-report measure based on the work of Bell and Kozlowski (2002). The researchers successfully established that self-efficacy moderated the capacity to act upon entrepreneurial opportunities. Perhaps the most important outcome of this work was that levels of self-efficacy relate to an entrepreneur's belief that he or she would benefit from formal learning experiences.

Research encouraged learning environments that used collaboration and relationship-building among entrepreneurs to develop trust relationships (Bergh et al., 2012). The implications of increased trust relationships were to increase self-efficacy through vicarious experiences (observing the success of others and trusting that an opportunity can be seized because it worked for someone with similar goals). While the proposed learning networks would be considered formal, government-sponsored learning opportunities, they should be mostly comprised of informal social relationship building among participants. The proposed learning networks would be conducted by university experts and consultants who can help entrepreneurs establish social networks through a series of lectures and seminars. The aim of the learning network was to recognize the novelty and uncertainty experienced by entrepreneurs and provide an environment where joint learning, increased knowledge and self-reflection increased participants' capacity to act upon business opportunities. Participating entrepreneurs' self-efficacy would be increased through participation in these formal learning environments and increase their chances for success.

In contrast to the idea that formal learning networks facilitated entrepreneurial readiness, another study focused on the size of an entrepreneur's peer network (Arenius & De Clercq, 2005). Entrepreneurs in areas where a lot of other similar businesses exist influenced the cohesiveness of the entrepreneurial network. Within these social networks, the research demonstrated that entrepreneurs were able to learn from their peers, share resources, and act on opportunities through shared knowledge, rather than formal educational environments.

Bernstein and Carayannis (2012) studied the perceived value of undergraduate entrepreneurship education. Specifically, Bernstein and Carayannis studied two undergraduate approaches to entrepreneurship education. One program was a entrepreneurship major while the other was an elective. Two types of self-efficacy were examined including initial interest in entrepreneurship as a career and an outcome of self-efficacy in the participants ability to perceive success. Results suggested that participants who chose entrepreneurship as a major discipline of study had higher levels of self-efficacy and belief that they would have a successful career as an entrepreneur. Results suggested that the more educated students were about entrepreneurship, the more confident they were in their own abilities to achieve success. Implications from this research indicated that entrepreneurship education would increase entrepreneurial self-efficacy. The research further suggested that students with demonstrated lower self-efficacy were likely to agree that choosing entrepreneurship as a major would increase their ability to achieve success. Bernstein and Carayannis suggest that integration of entrepreneurship education into non-entrepreneurship majors would most likely offer value to student self-efficacy should they later choose entrepreneurship as a career.

Like Bernstein and Carayannis (2012), Kilenthong, Hills, and Monllor (2008) investigated the impact of entrepreneurship education on entrepreneurial self-efficacy. Basing

their research on the idea that entrepreneurship is a planned behavior and not done solely out of necessity, Kilenthong et al. (2008) viewed educational programs as the method to help students be successful in entrepreneurship. Further, they hypothesized that entrepreneurship students were more likely to learn from an entrepreneurship program than students not intending to enter entrepreneurship as a career. Results showed that education has a positive correlation with self-efficacy and did increase levels of entrepreneurial self-efficacy. Their study also demonstrated that education complemented prior work experience for students intending to become entrepreneurs. Implications of the research were that educational programs should consider work experience and background and offer more support resources to increase the self-efficacy of students without prior work experience.

Peterman and Kennedy (2003) examined the effect of an enterprise education program on the self-efficacy of secondary school students toward starting a new business. Using a pre-test, post-test design, the research demonstrated an increase in entrepreneurial self-efficacy as a result of the educational program. Peterman and Kennedy used as sample of 117 students who were beginning an educational program and compared them with a control group of 119 students who were in the same school, but had declined to enter the program. At the end of five months, the questionnaire was offered again and was answered by 112 students in the program and 112 students who were not in the program. Kuratko (2005) determined that entrepreneurship could be taught and identified the field of entrepreneurship as a discipline that could be learned.

Work Experience and Self-Efficacy

The literature reveals significant studies that explored the relationship between work experience and the self-efficacy of entrepreneurs. Nandy (1973) explored the correlation between entrepreneurial competences with the motivational factors of achievement, efficacy and

power. In contrast to other research (Peterman & Kennedy, 2003), Nandy found no correlation between the overall performance of an entrepreneur and their previous achievements or social status. Nandy (1973) summarized that the 67 entrepreneurs studied were established in their business for at least five years suggesting that entrepreneurs were less dependent on the motivational factor of previous work experience considered in the study. Education, however, did have a positive impact on entrepreneurial performance, suggesting that after reaching a certain level of success, entrepreneurs depend on the ability to learn new techniques and technologies (Nandy, 1973).

While innovation may be cultivated and enhanced through work experience as an entrepreneur, some research has investigated how education, earlier in their career, may influence entrepreneurial success. Cooper and Lucas (2006) investigated the effectiveness of an educational program on the entrepreneurial self-efficacy and entrepreneurial intention. Their investigation was of an educational program offered to British undergraduate university students. The business incubation program was designed to develop entrepreneurial skills, build confidence and create relationships among participants from diverse cultural backgrounds and various disciplines. The curriculum included skills training for networking, team building and creativity. The program encouraged nascent entrepreneurs to seek skills, confidence and contacts within an educational environment through the support of faculty and practicing entrepreneurs. Based on a pre-test, post-test design, the 218 participants studied, who assessed their own knowledge of how to start a new business as good or excellent, rose from 41% to 88% over the course of the program. The confidence that the participants had in the knowledge and ability to start a new business rose as a result of the educational program offered. Results also showed that the positive results perpetuated up to six months after the program's completion.

Lucas et al. (2009) used a theory-based approach to investigate what characteristics of industry experience would influence self-efficacy. Recognizing that enhanced self-efficacy was developed through authentic mastery, failure, vicarious experience, and the self-assessment of skills, Lucas et al. suggested that students would be affected by work experience closely related to their intended career. Work experience, venturing self-efficacy, and entrepreneurial intention were all considered. Workplace experience was shown to build competence and confidence, encouraging graduates to seek careers within their fields of study. From the study, technology entrepreneurs benefited from the design of authentic work experiences offered to undergraduates in combination with mentoring prior to starting a new business.

Kilenthong et al (2008) examined the impact of entrepreneurship education on entrepreneurial self-efficacy. The researchers polled incoming MBA students upon entering the university and then again two years later. A total of 267 participants were polled at both times. The intent was to measure the participants intentions to start a new business and their levels of self-efficacy to perform business-related tasks. Results indicated that education has a positive impact on self-efficacy and the intention to become an entrepreneur. Students with degree focuses in entrepreneurship programs had significantly higher self-efficacy and higher intentions to start a business than students not in an entrepreneurship degree program.

Peterman and Kennedy (2003) used as sample of 117 students who were beginning an educational program and compared them with a control group of 119 students who were in the same school, but had declined to enter the program. At the end of five months, the questionnaire was offered again and was answered by 112 students in the program and 112 students who were not in the program. Results indicated that 80% of the students who participated in the program had prior entrepreneurial experience. Therefore, students choosing to enter an entrepreneurial

education program were more likely to have prior work experience. From the Peterman and Kennedy (2003), participants with prior work experience were more likely to choose an entrepreneurship education program and more likely to have higher levels of self-efficacy toward entrepreneurship as a career. The control group did not have higher perceptions of desirability or feasibility toward entrepreneurship as a career.

Alvarez-Harranz, Martinez-Ruiz and Valencia De Lara (2011) investigated work experience and its influence on entrepreneurship across 22 countries throughout the world. Their study concluded that previous work experience was more prevalent among male entrepreneurs while education was the stronger motivation among female entrepreneurs. However, both male and female entrepreneurs demonstrated higher efficacy levels as a direct result of their previous work experience. Specifically, the study concluded that previous work experience encouraged the confidence needed to initiate entrepreneurial activities.

Social Influences of Entrepreneurs during Education

Research by Moog & Backes-Gellner (2009) observed social capital (knowledge gained from others, referrals, opportunity recognition) as having a significant impact on the choice of students to become entrepreneurs. Contact with others perceived to be experts, resources or strategists in entrepreneurship increases the likelihood that the students observed would become entrepreneurs. Similarly, Moog & Backes-Gellner observed that students with higher levels of contact with family and friends, the more likely they were to seek entrepreneurship. Other social factors include that students with entrepreneurial parents were more likely to continue the family trade by becoming entrepreneurs, themselves. Students with familial ties to entrepreneurship might not have intentionally chosen entrepreneurship as a career based on their own innovation

or interest, but rather sought entrepreneurship education so they could successfully take over the family business.

Social Influences of Entrepreneurs at Work

Some entrepreneurial aspirations are developed due to social influences. Dyer (1994) observed that some entrepreneurial careers began from having too few employment opportunities at workers' existing employment. This lack of opportunity led workers to seek opportunities outside established organizations. Individuals who perceived a lack of opportunity would be led to self-employment as a gainful career. Dyer also observed that economic growth in a region, especially in specific sectors or fields, might spawn entrepreneurial interests and innovation.

Taylor (1996) observed several motivations that influence the choice to be self-employed instead of choosing paid, conventional employment as a career. Those motivational factors included the potential for higher pay in self-employment and the potential freedom self-employment provided the workers to innovate their ideas. Taylor recognized that employees who already had paid employment felt more security in their endeavor to become self-employed.

In circumstances with high unemployment rates and diminished access to financial opportunities, individuals may seek entrepreneurship as a way to gain financial independence and overcome social barriers (Ahmed et al., 2011). Tyszka (2011) evaluated three groups of workers consisting of opportunity-driven entrepreneurs, necessity-driven entrepreneurs, and wage earners. Opportunity entrepreneurship was defined as individuals who saw and took advantage of an opportunity. Necessity entrepreneurship was individuals who chose entrepreneurship because it was the best possible option in the workplace for them at the time. The research contributed to self-efficacy research because it found that opportunity-driven

entrepreneurs had higher levels of self-efficacy than necessity-driven entrepreneurs and wage earners.

Another differentiation used in the literature (Tyszka, 2011) to distinguish opportunity-driven entrepreneurship from necessity-driven entrepreneurship was whether they left a previous, paid job on their own accord (opportunity entrepreneurship) or if they left a job involuntarily (necessity-driven entrepreneurship). By distinguishing entrepreneurs into two groups, social and environmental factors become more significant.

Poschke (2013) observed that not all entrepreneurs choose self-employment as a career. Observation of industrialized countries revealed that as much as 14.4% of entrepreneurs became self-employed out of necessity and not to pursue a recognized opportunity. This occurred more frequently in poorer countries or regions with depressed economies.

Processes and Behaviors of Workers Who Became Entrepreneurs

Poschke (2013) sought to explain entrepreneurial behavior by examining the background of entrepreneurs and their decision to become entrepreneurs. The research observed that entrepreneurs were more likely to have extreme (either high or low) educational backgrounds and historical earnings. Workers with low wages would seek entrepreneurship, but would be more likely to reject risky projects and remain employed until a perceived high-potential opportunity was available. Highly paid conventional workers were likely to pursue entrepreneurship because of their ability to invest in an opportunity and their potential to survive a risky first year. In Poschke's model, workers who became entrepreneurs were either low wage earners with low levels of education, or they were high wage earners with high levels of education. Individuals with intermediate levels of either wage or education usually remained conventional workers.

Career Choice and Entrepreneurial Decision-Making

Central to the current research study, career decision-making and career choice have been examined in relationship to self-efficacy. Zhao et al (2005) investigated self-efficacy as a mediator between graduate student intent to become entrepreneurs. Their research demonstrated that high entrepreneurial self-efficacy resulted in greater intentions to become entrepreneurs. Among the factors studied, levels of learning and experience were the more influential on levels of self-efficacy and, therefore, had the greatest impact on entrepreneurial intentions.

Forbes (2005) investigated entrepreneurial decision-making and the self-efficacy of enterprise owners. Managers' belief about themselves and their abilities to achieve success were correlated with decision-making processes. Forbes recognized a lack of research on the differences between entrepreneurs and the way they processed information and made decisions. One factor that influenced differences in decision-making style was previous work experience. Self-efficacy beliefs were identified as having an influence on behavior. More importantly, Forbes observed that past behavior and experiences had direct influences on self-efficacy.

Taylor and Betz (1983) developed an instrument to measure self-efficacy expectations, specifically as they relate to career decision-making processes. Their research suggested that participation in college coursework increased students' perceived ability to make career decisions. Additionally, students with less confidence in their own ability to complete career-tasks were more indecisive about career choice. Findings suggested further research on the link of self-efficacy among entrepreneurs and the variables that contribute to career decisions.

CHAPTER III: METHODOLOGY

Chapter II presented a discussion of the literature that informed and provided context for this study. In this chapter, the research design, tools, techniques, and processes used in this study are presented. Using quantitative research methods, the methods presented in this chapter investigated how career decision-making and career expectations were influenced by background and career decision-making self-efficacy.

To measure career decision-making self-efficacy, a scale developed by Betz, Klein and Taylor (1996) was used. Betz, Klein and Taylor chose to measure levels of career decision-making self-efficacy using the CDMSE-SF scale and compared results to career decisions of students enrolled in an introductory psychology class at a university in the Midwest United States. The study investigated the development of a self-efficacy measurement focusing on behaviors used when individuals make career decisions and the way self-efficacy serves to mediate career indecision. The study relied on Bandura's (1977) self-efficacy theory by establishing a relationship between high self-efficacy and behavior leading to decision-making or low self-efficacy leading to avoidance behavior.

Results of the CDMSE scale compared to measures of career decision-making indicated that high self-efficacy directly contributes to the ability of students to make career decisions. This measurement is critical to the current research because it provided a quantitative value of career decision-making self-efficacy that can be compared to the independent variables of career intent, career choice, educational background, and work experience.

Purpose of the Study

The purpose of this quantitative study was to investigate to what extent the educational background, career choice, and employment background influences the level of self-efficacy

among entrepreneurs or those intending to become entrepreneurs.

Research Questions

In an effort to focus on career decision-making self-efficacy among entrepreneurs and the factors that may influence self-efficacy and career expectations, these specific research questions were proposed:

1. To what extent is the level of career decision-making self-efficacy different for individuals who intentionally chose entrepreneurship as a career compared to those who did not intentionally become entrepreneurs?
2. To what extent is the level of career decision-making self-efficacy different for entrepreneurs and potential entrepreneurs with different educational levels?
3. To what extent is career decision-making self-efficacy impacted by the work experience (i.e. years of experience) among entrepreneurs and potential entrepreneurs?

Table 1, in Chapter II, provides a summary of the literature that was reviewed with regard to the research questions addressed in this study. Some of the literature examined involved defining entrepreneurship, education and self-efficacy, work experience and self-efficacy among other topics.

Research Design

Survey research was used to conduct this study. The research was conducted as a non-experimental research design, as it did not involve a manipulation of the situation, circumstances, or experience of the participants. The independent variables were the students' choice to become an entrepreneur, educational background, and work experiences. The dependent variable was the measured level of career decision-making self-efficacy among participants. The study looked at

the differences in scores on the Career Decision Making Self-Efficacy Scale Short Form (CDMSE-SF scale) scores.

Research Methodology

The level of self-efficacy, measured using Betz, Klein and Taylor's (1996) Career Decision-Making Self-Efficacy Scale Short Form (CDMSE-SF scale) scores were the outcome variable. The CDMSE-SF scale was used to measure entrepreneurial self-efficacy among a sample of nascent entrepreneurs actively involved in the Ventureprise program and among graduates who have completed the Ventureprise program. A target population of all active individual participants in the Ventureprise program was surveyed.

The CDMSE Short Form scale (Betz et al., 1996) contains 25 items using a five-point Likert scale. A score of 1 on each item indicated that the respondent had no confidence at all in the behavior suggested and a score of 10 indicated that the respondent had complete confidence in the behavior or concept suggested. The item content used behaviors relevant to five constructs, including an individual's self-appraisal, ability to collect occupational information, choices of goals, ability to forecast and problem-solving capability. At its origin, the CDMSE scale (Taylor & Betz, 1983) contained fifty items (ten items for each construct), but was later shortened to 25 items with five items per subscale mentioned (Betz et al., 1996).

The outcome of the survey was analyzed to determine if a positive relationship existed between entrepreneurial, career decision-making self-efficacy and the level of education, career choice, and work experience obtained prior to entering entrepreneurship. Specifically, the effect of education and work experience on nascent entrepreneurial, career decision-making self-efficacy was measured.

Target Population

The population of interest for this study included all nascent entrepreneurs participating in the Ventureprise program affiliated with the University of North Carolina at Charlotte. Ventureprise consists of two programs including the Venture Knowledge Series and the Charlotte Venture Challenge programs. The Venture Knowledge Series had 11 sub-programs and had 360 participants on average each year. The Charlotte Venture Challenge involved five workshops with a minimum of 200 participants per workshop each year. The target population for the current research included all 360 participants of the Venture Knowledge Series and the 200 participants of the Charlotte Venture Challenge. Because of the small size of the population being studied, this research targeted all 360 individuals who participated in both the Charlotte Venture Challenge and the Venture Knowledge programs.

The Venture Knowledge Series consists of monthly meetings among early-stage entrepreneurs to encourage their interaction with established entrepreneurs. The Venture Knowledge Series is only available to practicing entrepreneurs and not those who are considering entrepreneurship. Each month, established entrepreneurs are asked to speak and collaborate with new entrepreneurs to strengthen business insights and encourage connections among early-stage, innovation-based companies. Participants in the Venture Knowledge Series benefit through greater understanding of topics vital to success, connecting with regional topic experts that understand new business development, and building relationships with other entrepreneurs.

The Charlotte Venture Challenge (CVC) program was chosen for this study because it teaches participants how to assess opportunities, offers mentoring, and allows an environment where participants can connect with one another. CVC is a competition that supplies resources,

recognition, and connections to competitors through four rounds of competition. Previous research concluded, self-efficacy is not stagnating and entrepreneurs can increase their career decision-making self-efficacy through socializing with other successful entrepreneurs to model their actions (Freudenberg et al., 2011). Therefore, the CVC program participants were chosen as a target population for the current study.

Sampling Method

The population used for this study included participants in the Ventureprise programs affiliated with the University of North Carolina at Charlotte. Convenience sampling was used to poll all participants in either the Venture Knowledge Series or the Charlotte Venture Challenge programs. The population size was determined from all 548 Ventureprise participants. Using this technique, the researcher was able to collect data on nascent entrepreneurs from a representative collection of business fields. Using this method of sampling allowed for all Ventureprise participants to be chosen to participate in the current study.

Instrumentation

The items from the CDMSE-SF scale and demographic questions, such as gender, age, level of educational background, form of education, and years of work experience were gathered from the participants through one questionnaire. Listed below are the choices for each independent variable captured in the questionnaire along with the twenty-five items from the CDMSE-SF scale:

1. Gender
 1. M = male
 2. F = female
2. Ethnicity
 1. Non-Resident Alien

2. Unknown
 3. Hispanic
 4. Native American
 5. Asian
 6. African American
 7. Pacific Islander
 8. Caucasian
 9. Multiple Races
 10. Unknown
3. Age
1. 18-22
 2. 23-29
 3. 30-39
 4. 40-49
 5. 50 and over
4. What is the highest level of education you've completed?
1. Less than high school or GED
 2. High school diploma or GED
 3. High school diploma with workplace (on-the-job) training from an employer
 4. Some trade school courses/sessions completed (no certification)
 5. Completed trade school program or certification
 6. Some 2-year college courses
 7. Completed 2-year degree or equivalent
 8. Some 4-year college courses
 9. Completed bachelor's degree
 10. Some graduate school courses
 11. Completed graduate degree
 12. Other training not mentioned
5. Was it your choice to pursue entrepreneurship as a career?
1. Yes
 2. No
 3. Not Applicable
6. How many years of work experience do you have? _____

Questions 7-31 of the survey included the 25-item CDMSE-SF scale. Table 2 provides a summary of the survey items as they relate to each research question.

Table 2

Summary of Research Questions Addressed by Survey Items

Research Question	Survey Item(s)
1	5, 7-31
2	4, 7-31
3	6, 7-31

Instrument Reliability

After data collection, the researcher checked instrument reliability for the instrument used in the current study using a Cronbach Coefficient Alpha for each of the five subscales. Findings of that analysis are detailed in Chapter IV. In prior research (Betz et al., 1996), instrument reliability for the CDMSE-SF scale measured an alpha of .94 for the 25-item total score. The researchers also measured the subscales of the CDMSE-SF scale with scores of .83 for goal selection, .81 for planning, .73 for self-appraisal, .78 for occupational information and .75 for problem-solving subscales.

Data Collection Procedures

Permission to use the CDMSE-SF scale was obtained through Mind Garden Publishing through a purchase of the license to reproduce and administer the CDMSE-SF scale. Through the purchase of this license, the researcher signed Mind Garden Publishing's Online Use Guidelines and completed the online use application while agreeing to all terms and condition of use. Purchasing the use license to reproduce and administer the survey was based on the estimated number of participants in the study.

Prior to the collection of data for this study, written permission to collect data was given by the Institutional Review Board (IRB) at the University of Arkansas. A Qualtrics online survey platform was used to develop the survey and the survey was delivered electronically via

email to each participant. Participant emails were obtained through cooperation with the Ventureprise program officials. Participants received a URL in the email messages sent which led them, first, to the questionnaire. A total of 361 contacts were collected from the Charlotte Venture Challenge program. A total of 186 contacts were collected from the Venture Knowledge Series. There were 45 duplicate contacts that existed in both programs and these were unduplicated prior to the survey distribution.

First, the email message offered a brief explanation of the study being conducted. Second, participants were informed of the confidentiality and anonymity of their responses. Participants were given consent information on the home page of the survey and informed that the survey was voluntary. The surveys were administered through the Qualtrics survey management services offered by the University of Arkansas Research Data Services department. Upon completion of the survey, responses were collected in the Qualtrics system for analysis.

Using email, each participant received an individual hyperlink for the survey. This link could only be used once by each participant. The participant's email and other information were automatically saved with their survey data. Both completed and in progress responses were tracked to facilitate sending reminders and thank you messages. Participants were asked to complete the survey within ten days of receipt of the link. Reminder emails were sent every seven days to participants who had not yet completed the survey. A maximum of two reminder emails were sent if participants had not completed the survey.

A survey expiration date for the survey link was established at 30 days. If, after 30 days, the participant had not completed the survey, the link expired and was no longer available. Participants who started a survey, but did not finish, were allowed up to one week to finish the

survey. If the survey was not completed in seven days, the response was recorded with the completed questions in Qualtrics.

Responses were tracked and viewed using the recorded responses feature within Qualtrics. For each of the responses, the researcher could view the response, response type, email, and survey start and end times. A response ID was assigned as a unique identification code for each survey response. Only recorded responses had response ID's. From Qualtrics, the researcher could view and export reports on individual responses. Once participants completed the survey, an email was automatically sent confirming the submission of their survey and thanking them for their participation. Partially completed surveys could also be tracked using Qualtrics.

Qualtrics tracked survey responses in two categories: started surveys and completed surveys. Started surveys were tracked as the number of responses that were collected, including those submitted by the participant and those that were started, but not completed. Completed surveys were counted in Qualtrics as only those that had been submitted by the participants. The researcher also tracked the duration of survey completion, individual question response rates and overall survey completion percentage.

Participants who did not answer any of the 25 items on the CDMSE-SF scale were omitted from analysis. Incomplete responses were accounted for using an adjusted scale. In survey research, missing values are common and should be accounted for using adjusted scales (Gravely, 1998). For participants who answered at least one item, the CDMSE-SF subscale score was adjusted to exclude missing values and avoid skewed averages. CDMSE-SF scale scores for participants, who answered some items, but not all 25, were given pro-rated averages so that the answers that were provided were included in the analysis. Missing item values were

ignored. One response was omitted because the representative from Mind Garden, the instrument publisher, completed the survey for quality control purposes as part of their procedure for ensuring the survey is administered properly.

Data Analysis

The outcome of the survey was analyzed to determine if a relationship exists between entrepreneurial, career decision-making self-efficacy and the education and work experience obtained prior to entering entrepreneurship. Specifically, the effect of education, career choice, and work experience on entrepreneurial, career decision-making self-efficacy was measured. The statistical software called SAS (Statistical Analysis System) Enterprise Guide was chosen as the primary collection point for data entry and all analysis. Data were analyzed for descriptive statistics for age, gender, education, and work experience, first. Table 3 summarizes the research questions and the variables to be studied.

Research question number one asked to what extent is the level of career decision-making self-efficacy different for individuals who intentionally chose entrepreneurship as a career compared to those who did not intentionally become entrepreneurs. Using t-test analyses, the researcher compared the choice to become an entrepreneur as a categorical, independent variable to the mean scores of each of the five CDMSE-SF subscales as a continuous, dependent variable.

Research question number two asked to what extent is career decision-making self-efficacy impacted by the educational background of entrepreneurs and potential entrepreneurs. To answer this question, an analysis of the variance was conducted. The educational background was analyzed as a categorical, independent variable. The mean scores on each of the five CDMSE-SF subscales were analyzed as the dependent variable.

Work experience relates to self-efficacy because entrepreneurs who achieve success in work prior to starting a new business may demonstrate higher levels of self-efficacy while failure in past work experience can lower levels of confidence in their abilities (Betz & Luzzo, 1996). The total number of years work experience the individual had was evaluated as the independent variable. Because the independent variable was continuous, correlation analyses were conducted between scores on each of the five CDMSE-SF subscales and the participants' years of work experience. Table 3 illustrates the analysis that was conducted for each of the three research questions.

Table 3

Variables and Test Measures

Research Question	Variable	Factors	Scale Types	Variable Type	Statistical Test
1	Choice to Become an Entrepreneur	Yes/No	Categorical	Independent	Descriptive Statistic
	CDMSE-SF Scale	Goal Selection Planning Self-Appraisal Occupational Information Problem-Solving	Continuous	Independent	T-Test
2	Education	Level of Education Completed	Categorical	Independent	Descriptive Statistic
	CDMSE-SF Scale	Goal Selection Planning Self-Appraisal Occupational Information Problem-Solving		Dependent	ANOVA (Level of Education)

Table 3 (Cont.)

Variables and Test Measures

Research Question	Variable	Factors	Scale Types	Variable Type	Statistical Test
3	Work Experience	Years of Work Experience	Continuous	Independent	Descriptive Statistic
	CDMSE-SF Scale	Goal Selection Planning Self-Appraisal Occupational Information Problem Solving	Continuous	Dependent	Correlation

CHAPTER IV: RESULTS

This chapter contains the findings for the three research questions proposed in chapter one. This study examined the extent that educational background, career choice, and employment background influenced the level of career decision-making self-efficacy among entrepreneurs or those intending to become entrepreneurs based on the five subscales of the Career Decision-Making Self-Efficacy – Short Form (CDMSE-SF) scale. The five subscales are: goal selection, planning, self-appraisal, occupational information, and problem-solving. The CDMSE-SF scale was distributed to participants in the Ventureprise program, an entrepreneurial education and business advisory service partially supported by the University of North Carolina at Charlotte. An estimated number of 560 participants were involved in Ventureprise programs during the 2013-2014 academic year (D. Collins, personal communication, October 23, 2012).

At the time of data collection, 548 email addresses were provided. From the 548 participants sampled, 45 were omitted due to duplication resulting in an initial population of 503. Another 29 emails were invalid or undeliverable to the recipients yielding a final population of 474. A total of 73 surveys (15.4%) were completed by participants and returned to the researcher. There were several follow-up notifications sent to respondents and several responded after repeat notifications. The survey was also available to potential respondents for a total of four weeks. Although reminder emails were sent weekly, the response rate was lower than expected but not atypical of online survey response rates.

Instrument Reliability Analysis

To align this study with prior research, instrument reliability was analyzed by the researcher for the current study using a Cronbach Coefficient Alpha for each of the five

subscales. The reliability measurement for the goal selection subscale was calculated at .93. The planning subscale reliability analysis was determined to be .94. The subscale of self-appraisal resulted in an alpha value of .94. The occupational information subscale resulted in an alpha coefficient of .95. Finally, the fifth subscale, problem-solving, provided an alpha value of .94. In contrast to the prior research (Betz et al., 1996), where instrument reliability for the CDMSE-SF subscales was calculated as .83 for goal selection, .81 for planning, .73 for self-appraisal, .78 for occupational information and .75 for problem-solving subscales, the results from this study were significantly higher. Table 4 represents the five CDMSE-SF subscales and their corresponding items on the survey.

Table 4

CDMSE-SF Subscales and Cronbach Coefficient Alpha

Subscales	Item Numbers on CDMSE-SF Scale	Cronbach Coefficient Alpha
Goal Selection	2, 6, 11, 16, 20	0.93
Planning	3, 7, 12, 21, 24	0.94
Self-Appraisal	5, 9, 14, 18, 22	0.94
Occupational Information	1, 10, 15, 19, 23	0.95
Problem Solving	4, 8, 13, 17, 25	0.94

Missing Data

Missing data was evaluated based on its classification as missing completely at random, missing at random or missing not at random (Howell, 2007). Missing data in the current research were determined to be completely at random because there were no predictive factors determined to have caused the data to be missing. The complete response was removed from analysis for any respondents who did not answer the questions pertaining to independent variables (i.e. career choice, education level completed, or years of work experience).

The five scales of the Career Decision Self-Efficacy – Short Form (CDMSE-SF) scale served as the dependent variables. The subscales included self-appraisal, occupational information, goal selection, planning, and problem solving. Table 4 illustrates the five subscales of the CDMSE-SF and the corresponding survey questions associated with each subscale. Each subscale score is the sum of the responses given to the five items associated with that subscale. Total subscale scores can range from a minimum of 5 to a maximum of 25 per subscale. The mean subscale scores used in the current study were calculated by dividing the total subscale score by five. There were participants who answered some items from the CDMSE-SF scale, but did not complete all 25 items. In these situations, missing data were omitted and analysis continued using the remaining scores within each subscale. Missing data were determined to occur completely at random because there were no predicted independent variables that influenced who did or did not answer the questions. The researcher chose not to use complete case analysis for these situations, which would mean complete removal of that participant from analysis. If partial scores were available removal of the participant would cause a substantial decrease in the sample size. For example, if a participant answered four out of the five items within a subscale, the mean of the remaining four scores was calculated as the subscale score. The SAS software used for statistical analysis in this study controlled for those missing items by calculating the mean scores of each subscale. Within SAS, missing item scores were replaced with “.” in the dataset and the mean scores for each subscale were calculated based on the number of valid numeric responses given.

The calculation of mean scores, omitting invalid items, resulted in a total CDMSE-SF scale score calculated as the mean score of all 25 valid numeric responses from the instrument. The CDMSE-SF subscale scores are the sum of all responses offered within the subscale divided

by the number of responses, with a goal of returning the mean score back to the response continuum of one to five (Betz & Taylor, 2012). Therefore, in the current study, scores for the subscales were calculated using the mean of the numeric values for the five items that make up each subscale, excluding missing values.

Demographics

Descriptive characteristics were collected to describe the participating population. The independent variables gender, age range and ethnicity were used to describe the population.

Gender. Among the respondents, most were men ($n = 54$ or 76.06%). Women made up the remainder of the population ($n = 17$ or 23.94%). Three participants did not indicate a gender on the survey. Table 5 displays the demographic data for gender.

Table 5

Gender of Entrepreneurs

Gender	<i>N</i>	%
Male	54	76.06
Female	17	23.94

Ethnicity. Among the respondents, most were Caucasian ($n = 51$ or 73.91%). Six respondents were Asian ($n = 6$ or 8.70%). Other respondents included statuses of African American ($n = 4$ or 5.80%), multiple races ($n = 3$ or 4.35%), non-resident alien ($n = 2$ or 2.90%), and unknown or other category ($n = 2$ or 2.90%). One participant reported Hispanic ethnicity ($n=1$ or 1.45%). Table 6 illustrates the participants' answers.

Table 6

Ethnic Groups of Entrepreneurs

Ethnic Groups	<i>N</i>	%
Caucasian	51	73.91
Asian	6	8.70
African American	4	5.80
Multiple Races	3	4.35
Non-Resident Alien	2	2.90
Unknown/Other	2	2.90
Hispanic	1	1.45
Native American	0	0.00
Pacific Islander	0	0.00
Total	69	100.00

Age Range. The age of the respondents was collected by using ranges. The age reported by the respondents is represented in Table 7.

Table 7

Age Groups of Entrepreneurs

Age Groups	<i>N</i>	%
50 and over	23	33.33
30-39	21	30.43
40-49	12	17.39
23-29	9	13.04
18-22	4	5.80
Total	69	100.0

Choice to Become an Entrepreneur. Of the 73 respondents to the survey, only 69 responded to the question about whether or not they chose to become an entrepreneur. Participants who chose entrepreneurship as a career ($n = 55$ or 79.71%) and 15.94% of the respondents reported that they did not choose entrepreneurship as a career ($n = 11$). Table 7 details the counts and percentages by participants' answer to the question regarding their choice to become an entrepreneur.

Table 8

Entrepreneur Choice to Become an Entrepreneur

Choice	<i>N</i>	%
Yes	55	79.71
No	11	15.94
Not Applicable	3	4.35

Educational Background. Of the 73 respondents to the survey, only 69 indicated the highest level of education they completed. Participants with completed graduate degrees were the largest group observed ($n = 33$ or 47.83%) and 28.99% of the respondents had completed bachelor's degrees ($n = 20$). Table 9 details the counts and percentages by participants' highest educational background.

Table 9

Entrepreneurs' Highest Education Level Completed ($N=69$)

Education Level	<i>N</i>	%
Completed Graduate Degree	33	47.83
Completed Bachelor's Degree	20	28.99
Some Graduate School Courses	10	14.49
Some 4-year College Courses	4	5.80
High School Diploma	2	2.89

Years of Work Experience. Of the 73 respondents to the survey, only 69 indicated the number of years of work experience they had. Participants with 21 and 11 years of work experience were the largest groups observed. Table 10 details the distribution of the remaining respondents.

Table 10

Entrepreneurs' Years of Work Experience (N=69)

Years of Work Experience	<i>N</i>	%
21	5	7.25
11	5	7.25
13	4	5.78
4	4	5.78
1	4	5.78
35	3	4.35
31	3	4.35
16	3	4.35
5	3	4.35
39	2	2.90
38	2	2.90
34	2	2.90
26	2	2.90
10	2	2.90
8	2	2.90
6	2	2.90
3	2	2.90
54	1	1.45
46	1	1.45
41	1	1.45
37	1	1.45
33	1	1.45
32	1	1.45
30	1	1.45
29	1	1.45
28	1	1.45
27	1	1.45
24	1	1.45
20	1	1.45
19	1	1.45
18	1	1.45
17	1	1.45
12	1	1.45
9	1	1.45
7	1	1.45
2	1	1.45

Research Question Results

There were three research questions that guided this study and the results are detailed in this section.

Research Question 1: To what extent is the level of career decision-making self-efficacy different for individuals who intentionally chose entrepreneurship as a career compared to those who did not intentionally become entrepreneurs?

To investigate this research question, the survey asked participants if they wanted to be entrepreneurs, allowing for categorical answers of “yes” or “no”. Analysis involved the mean and standard deviations of CDMSE-SF subscale scores for goal selection, planning, self-appraisal, occupational information, and problem solving to quantify the participants’ perceived efficacy to make good decisions about their career decisions.

Of the 73 participants who completed the survey, four participants did not answer the question to indicate whether they chose entrepreneurship as a career. Of the remaining 69 participants, three participants indicated that this question was not applicable to their situations. The remaining 66 respondents included six respondents who did not answer the questions on the subscales. Sixty students were used in the t-test analysis for the each subscale. From the items analyzed ($N = 60$), the majority of participants indicated that they did choose entrepreneurship as a career ($n = 52$). The results are shown in Table 11 below.

Table 11

Comparison of CDMSE-SF Scale Overall Scores for Entrepreneurial Choice ($N=60$)

Response	<i>n</i>	Mean	SD
Yes	52	4.32	0.69
No	8	3.87	0.85

The average overall score on the CDMSE-SF scale for participants who chose entrepreneurship as a career ($n = 52$, $M = 4.32$) was higher than those who did not choose entrepreneurship as a career ($n = 8$, $M = 3.87$). Each subscale was analyzed separately to determine the differences in mean subscale scores between those who chose entrepreneurship as a career and those who did not. The results of means calculations are illustrated in Table 11. The results are shown in order by the total mean score by response and subscale.

Participants who chose entrepreneurship as a career scored marginally higher in the occupation information ($M = 4.44$) and planning ($M = 4.43$) subscale scores than those in the other subscales. Respondents who chose entrepreneurship as a career scored higher in the self-appraisal subscale ($M = 4.28$) than those in the problem-solving subscale ($M = 4.23$). Finally, the lowest scores for those who chose entrepreneurship were in the goal selection subscale ($M = 4.20$).

Among participants who did not choose entrepreneurship as a career, the highest scores were within the occupational information subscale ($M = 4.09$). The subscale for planning ($M = 3.98$) showed the next highest scores for those who did not choose entrepreneurship and those scores were higher than those in the self-appraisal subscale ($M = 3.85$). The lowest scores were observed in the goal selection ($M = 3.75$) and problem-solving ($M = 3.73$) subscales for those who did not indicate that they chose entrepreneurship as a career. Table 12 displays the results of the analysis of CDMSE-SF subscale mean scores.

Table 12

Comparison of CDMSE-SF Subscale Mean Scores (N=60)

Survey Question: Was it your choice to pursue entrepreneurship as a career?			
<u>Response</u>	<u>Subscale</u>	<u>Mean Score</u>	<u>SD</u>
Yes	Occupational Information	4.44	0.71
	Planning	4.43	0.69
	Self-Appraisal	4.28	0.77
	Problem-Solving	4.23	0.82
	Goal Selection	4.20	0.76
No	Occupational Information	4.09	0.79
	Planning	3.98	0.87
	Self-Appraisal	3.85	0.71
	Goal Selection	3.75	1.01
	Problem-Solving	3.73	1.07

A t-test was used to compare the mean and standard deviation of CDMSE-SF scale scores to the participants' responses to the survey question as was illustrated in Table 11. Overall, participants who indicated that they chose entrepreneurship as a career ($M = 4.32$, $SD = 0.69$) scored higher on the CDMSE-SF scale than those who did not choose entrepreneurship as a career ($M = 3.87$, $SD = 0.86$), $t(58) = 1.64$, $p = 0.14$. The results, however, were not statistically significant when analyzed using an alpha level of .05.

Participants who indicated they chose entrepreneurship as a career scored higher on the goal selection subscale ($M = 4.2$, $SD = 0.76$) than participants who did not choose entrepreneurship as a career ($M = 3.75$, $SD = 1.01$), $t(58) = 1.5$, $p = 0.14$. However, the alpha level was set at .05 for this analysis and the results were not statistically significant.

Similar results were observed when comparing choice of entrepreneurship to the subscale for planning. Participants who chose entrepreneurship as a career scored higher on the planning subscale ($M = 4.43$, $SD = 0.69$) than participants who did not choose entrepreneurship as a career

($M = 3.98$, $SD = 0.87$), $t(58) = 1.68$, $p = 0.10$. Again, with an alpha level of .05 and the results were not statistically significant. However, when compared to the other four subscales, planning observed the most significant difference between the two groups.

The scores for self-appraisal demonstrated a difference in mean scores between those who chose entrepreneurship as a career ($M = 4.28$, $SD = 0.77$) than those who did not ($M = 3.85$, $SD = 0.71$), $t(58) = 1.49$, $p = 0.14$. The resulting analysis did not show a significant difference. Similarly, the subscale scores for problem-solving did not demonstrate a significant difference between those who chose the career ($M = 4.23$, $SD = 0.82$) and those who did not ($M = 3.73$, $SD = 1.07$), $t(58) = 1.52$, $p = 0.13$. The subscale that demonstrated the least difference in scores between means for those who chose the career ($M = 4.44$, $SD = 0.71$) and those who did not ($M = 4.09$, $SD = 0.79$), $t(58) = 1.27$, $p = 0.21$ was occupational information. Table 13 illustrates the t-test results for the CDMSE-SF scale scores for choice to become an entrepreneur.

Table 13

T-Test Results of CDMSE-SF Scale Scores for Choice to Become an Entrepreneur (N=60)

Survey Question: Was it your choice to pursue entrepreneurship as a career?						
Scale	Choice	M	SD	t-value	df	p-value
Overall CDMSE-SF Scale	Yes	4.32	0.69	1.64	58	0.11
	No	3.87	0.85			
Planning	Yes	4.43	0.69	1.68	58	0.10
	No	3.98	0.87			
Problem-Solving	Yes	4.23	0.82	1.52	58	0.13
	No	3.73	1.07			
Goal Selection	Yes	4.20	0.76	1.50	58	0.14
	No	3.75	1.01			
Self-Appraisal	Yes	4.28	0.77	1.49	58	0.14
	No	3.85	0.71			
Occupational Information	Yes	4.44	0.71	1.27	58	0.21
	No	4.09	0.79			

Research Question 2: To what extent is the level of career decision-making self-efficacy different for entrepreneurs and potential entrepreneurs with different educational levels?

To answer research question 2, educational background was requested from participants based on the highest level they completed. Of the 73 respondents in the study, only 69 answered the question about their educational background. Within each subscale, only respondents giving valid answers to the subscale question were included in the analysis ($N = 62$). For the goal selection, planning and occupational information subscales, seven respondents did not provide a CDMSE-SF scale item response. For the self-appraisal and problem-solving subscales, eight respondents did not provide a CDMSE-SF scale item response.

The overall mean scores for the CDMSE-SF scale are presented in Table 14 by education level. The table is listed in order from the highest mean score on the overall scale to the lowest mean score. Participants with a completed bachelor's degree ($M = 4.41$) or a completed graduate degree ($M = 4.40$) had similar mean scores and their scores were higher compared to those with some 4-year college courses or some graduate school courses. To maintain the validity of the ANOVA results, the smallest groups were combined into one group. To help ensure all the groups were at least similar in size, the two largest groups were identified all other participants were combined into one group.

Table 14

Overall CDMSE-SF Scores by Educational Level (N=62)

Educational Level	<i>n</i>	<i>M</i>	<i>SD</i>
Completed Bachelor's Degree	19	4.41	0.59
Completed Graduate Degree	30	4.40	0.52
Other Categories	13	4.07	0.66

An analysis of the variance showed that the effect of educational level on the overall CDMSE-SF scale scores was not significant, $F(2,59) = 1.75, p = .18$. The Tukey Studentized Range comparison (alpha level = 0.05) was conducted to determine if significant differences existed between educational levels. Participants whose highest education level was a completed bachelor's degree ($M = 4.41, SD = 0.59$) demonstrated higher scores than those with completed graduate degrees ($M = 4.02, SD = 0.74$). While not statistically significant, another difference was observed as an increase in score between participants with completed graduate degrees ($M = 4.40, SD = 0.52$) and those in other educational categories ($M = 4.07, SD = 0.66$). Table 15 demonstrates the mean scores for each level of education for the overall CDMSE-SF scale scores.

Table 15

Analysis of Variance - CDMSE-SF Subscale Mean Scores by Educational Level

Subscale	<i>df</i>	<i>F</i>	<i>p</i>	<i>n</i>
Overall CDMSE-SF Scale	2, 59	1.75	0.1822	62
Goal Selection	2, 59	0.89	0.4151	62
Planning	2, 59	0.73	0.4840	62
Self-Appraisal	2, 58	1.29	0.2828	61
Occupational Information	2, 59	1.66	0.1990	62
Problem Solving	2, 58	3.63	0.0326	61

The sub-scales for goal selection, planning, self-appraisal, occupational information, and problem solving were used. Final subscales analyzed included Goal Selection ($n=62$), Planning ($n=62$), Self-Appraisal ($n=61$), Occupational Information ($n=62$), and Problem Solving ($n=61$). Results of the ANOVA for each of the subscale scores are presented in Table 15. Only the subscale for problem solving demonstrated a statistically significant difference between at least one of the education levels observed.

An analysis of the variance showed that the effect of educational level on the goal selection subscale scores was not significant, $F(2,59) = 0.89, p = .42$. The Tukey Studentized Range comparison (alpha level = 0.05) was conducted to determine if significant differences existed between educational levels. Participants with a completed bachelor's degree ($M = 4.34, SD = 0.63$) demonstrated higher goal selection mean scores than participants with a completed graduate degree ($M = 4.25, SD = 0.70$). Participants in the other categories scored lower on the mean scores for goal selection ($M = 4.02, SD = 0.79$). Table 16 demonstrates the mean scores for each level of education within the goal selection subscale.

Table 16

Goal Selection Subscale Mean Scores by Educational Levels (N=62)

Educational Level	<i>M</i>	<i>SD</i>
Completed Bachelor's Degree	4.35	0.63
Completed Graduate Degree	4.25	0.70
Other Categories	4.02	0.79

Note. $F(2, 59) = 0.89, p = 0.42$

An analysis of the variance showed that the effect of educational level on the planning subscale scores was not significant, $F(2,59) = 0.73, p = .48$. The Tukey Studentized Range comparison (alpha level = 0.05) was conducted to determine if significant differences existed between educational levels. The largest difference in means scores for the planning subscale occurred between participants with completed graduate degrees ($M = 4.53, SD = 0.49$) and those in other educational categories ($M = 4.32, SD = 0.72$). Another noticeable increase in mean scores occurred between participants with completed graduate degrees and those with completed bachelor's degrees ($M = 4.40, SD = 0.60$). Table 17 demonstrates the mean scores for each level of education within the planning subscale.

Table 17

Planning Subscale Mean Subscale Scores by Educational Level (N=62)

Educational Level	<i>M</i>	<i>SD</i>
Completed Graduate Degree	4.53	0.49
Completed Bachelor's Degree	4.40	0.60
Other Categories	4.32	0.72

Note. $F(2, 59) = 0.73, p = 0.48$

An analysis of the variance showed that the effect of educational level on the self-appraisal subscale scores was not significant, $F(2,58) = 1.29, p = .28$. The Tukey Studentized Range comparison (alpha level = 0.05) was conducted to determine if significant differences existed between educational levels. The largest increase in means scores for the self-appraisal subscale occurred between participants with completed bachelor's degrees ($M = 4.43, SD = 0.73$) and those within other categories ($M = 4.06, SD = 0.67$). Table 18 demonstrates the mean scores for each level of education within the self-appraisal subscale. Subscale scores were highest among those with complete bachelor's degrees ($M = 4.43$)

Table 18

Self-Appraisal Subscale Mean Subscale Scores by Educational Level (N=61)

Educational Level	<i>M</i>	<i>SD</i>
Completed Bachelor's Degree	4.43	0.73
Completed Graduate Degree	4.31	0.57
Other Categories	4.06	0.67

Note. $F(2, 58) = 1.29, p = 0.28$

An analysis of the variance was conducted to examine the mean scores from the occupational information subscale in relation to each education level collected. Table 19 illustrates the details of the analysis conducted. As with other subscales, one response was omitted from the ANOVA calculation.

Table 19

Occupational Information Subscale Mean Subscale Scores by Educational Level (N=62)

Educational Level	<i>M</i>	<i>SD</i>
Completed Bachelor's Degree	4.56	0.61
Completed Graduate Degree	4.51	0.55
Other Categories	4.22	0.51

Note. $F(2, 58) = 1.66, p = 0.20$

The analysis of the variance showed that the effect of educational level on the occupational information subscale scores was not significant, $F(3,58) = 1.13, p = .34$. The Tukey Studentized Range comparison (alpha level = 0.05) was conducted to determine if significant differences existed between educational levels. A difference was observed in means scores for the occupational information subscale between participants with completed bachelor's degrees ($M = 4.55, SD = 0.61$) and those with some graduate school coursework completed ($M = 4.18, SD = 0.53$).

An analysis of the variance was conducted to examine the mean scores from the problem solving subscale in relation to each education level collected. Table 20 illustrates the details of the analysis conducted.

Table 20

Problem Solving Subscale Mean Subscale Scores by Educational Level (N=61)

Educational Level	<i>M</i>	<i>SD</i>
Completed Graduate Degree	4.39	0.63
Completed Bachelor's Degree	4.33	0.68
Other Categories	3.75	0.96

Note. $F(2, 58) = 3.63, p = 0.03$

Analysis showed that the effect of educational level on the problem-solving subscale scores was significant, $F(2,58) = 3.63, p = .03$. The Tukey Studentized Range comparison (alpha

level = 0.05) was conducted to determine if significant differences existed between educational levels. A significant difference was observed in means scores for the problem-solving subscale between participants with completed graduate degrees ($M = 4.39$, $SD = 0.64$) and those within other categories ($M = 3.75$, $SD = 0.96$). Another increase in mean problem solving scores occurred between students with completed bachelor's degrees ($M = 4.33$, $SD = 0.68$) and those in other categories ($M = 3.75$, $SD = 0.96$) although the difference was not significant. Table 20 demonstrates the mean scores for each level of education within the problem solving subscale ordered by the highest mean score category.

Research Question 3: To what extent is career decision-making self-efficacy impacted by the work experience (i.e. years of experience) among entrepreneurs and potential entrepreneurs?

All five subscales of the CDMSE-SF scale were measured including the sub-scale items for goal selection, planning, self-appraisal, occupational information, and problem solving.

Table 4 illustrated the items on the survey that are part of each subscale score. The total number of years of work experience the individual had was evaluated as the independent variable. Table 21 illustrates the descriptive statistics collected on years of work experience.

Table 21

CDMSE-SF Scale Scores by Years of Work Experience (N=62)

<u>Years Worked</u>	<u>CDMSE-SF Subscale Scores</u>										
		<u>Goal Selection</u>		<u>Occupational Information</u>		<u>Planning</u>		<u>Problem Solving</u>		<u>Self Appraisal</u>	
	N	M	SD	M	SD	M	SD	M	SD	M	SD
11	5	4.47	0.44	4.12	0.73	4.84	0.17	4.68	0.23	4.40	0.85
21	5	4.47	0.50	4.48	0.48	4.36	0.62	4.58	0.20	4.36	0.71
4	4	4.41	0.55	4.40	0.59	4.50	0.62	4.60	0.43	4.00	1.12
1	3	4.32	0.55	4.33	0.50	4.33	0.61	4.20	0.69	4.33	0.64
5	3	4.35	0.33	4.20	0.69	4.27	0.50	4.73	0.31	4.40	0.20
13	3	4.46	0.44	4.47	0.23	4.67	0.31	4.47	0.58	4.40	0.72
16	3	4.09	0.45	4.00	0.53	4.47	0.58	4.00	0.69	4.00	0.35
3	2	3.78	1.50	3.80	1.70	3.60	1.41	4.00	1.41	3.90	1.56
6	2	4.34	0.25	4.50	0.71	4.50	0.42	4.40	0.00	4.00	0.00
8	2	4.16	0.96	4.30	0.99	4.00	0.85	4.30	0.99	4.10	1.27
10	2	4.52	0.16	4.30	0.42	4.40	0.00	5.00	0.00	4.60	0.00
26	2	3.26	0.23	2.70	0.14	3.90	0.42	3.60	0.28	2.80	0.00
31	2	4.60	0.57	4.70	0.42	4.30	0.99	4.60	0.57	3.80	0.00
35	2	4.46	0.03	4.30	0.14	4.50	0.14	4.60	0.28	4.40	0.28
39	2	3.92	0.12	3.60	0.00	4.20	0.57	4.00	0.28	3.80	0.28
2	1	4.52	0.00	4.40	0.00	4.40	0.00	4.60	0.00	4.80	0.00
7	1	4.24	0.00	3.80	0.00	4.40	0.00	4.20	0.00	4.80	0.00
9	1	4.44	0.00	4.20	0.00	4.80	0.00	4.40	0.00	3.80	0.00
17	1	4.16	0.00	3.80	0.00	4.20	0.00	4.20	0.00	4.20	0.00
18	1	3.84	0.00	3.80	0.00	4.20	0.00	4.00	0.00	3.20	0.00
19	1	4.92	0.00	4.80	0.00	5.00	0.00	5.00	0.00	5.00	0.00
20	1	4.96	0.00	4.80	0.00	5.00	0.00	5.00	0.00	5.00	0.00
24	1	4.92	0.00	4.60	0.00	5.00	0.00	5.00	0.00	5.00	0.00
27	1	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00
28	1	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00
29	1	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00
30	1	4.69	0.00	5.00	0.00	4.80	0.00	5.00	0.00	5.00	0.00
32	1	4.24	0.00	3.80	0.00	5.00	0.00	5.00	0.00	4.40	0.00
33	1	4.40	0.00	4.20	0.00	4.80	0.00	4.60	0.00	4.40	0.00
34	1	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00	5.00	0.00
37	1	4.72	0.00	5.00	0.00	4.80	0.00	4.40	0.00	4.60	0.00
38	1	4.84	0.00	4.80	0.00	4.60	0.00	4.80	0.00	5.00	0.00
41	1	3.92	0.00	3.80	0.00	5.00	0.00	3.80	0.00	3.80	0.00
46	1	3.08	0.00	3.40	0.00	4.00	0.00	2.80	0.00	2.40	0.00
54	1	2.63	0.00	2.00	0.00	2.75	0.00	3.00	0.00	2.67	0.00

The correlation analyses examined the relationship between scores on the CDMSE-SF subscales scores and the participants' years of work experience. Table 22 summarizes results of the correlation analysis. Results were evaluated to determine if there is a correlation between the variables.

Table 22

Relationship between Years of Work Experience and CDMSE-SF Scale Scores

Subscale	<i>n</i>	<i>r</i>	<i>p</i>
Planning	62	-0.183	0.1551
Goal Selection	62	-0.149	0.2485
Problem-Solving	61	-0.138	0.2886
Self-Appraisal	61	-0.135	0.3009
Occupational Information	62	-0.003	0.9803

Results of the correlation analyses indicated a weak correlation between years of work experience and entrepreneurial, career decision-making self-efficacy in all five sub-scale scores observed. When comparing years of work experience to the subscale scores for goal selection, the two variables were not closely correlated and results suggested a negative correlation, $r(62) = -0.149, p = 0.2485$. Similar statistics were observed when comparing years of work experience to the subscale for planning. Years of work experience and the planning self-efficacy subscale were not closely correlated, $r(62) = -0.183, p = 0.1551$. When evaluating the correlation between years of work experience and the self-appraisal subscale, no strong correlation existed, $r(61) = -0.135, p = 0.3009$. A positive correlation existed between years of work experience and scores on the occupational information subscale, $r(62) = 0.003, p = 0.9803$. For the last correlation analysis, there was no statistically significant nor strong correlation observed between work experience and subscale scores for problem-solving self-efficacy, $r(61) = -0.138, p = 0.2886$. Table 20 demonstrates the findings for the correlation analysis.

CHAPTER V: DISCUSSION, CONCLUSIONS, AND IMPLICATIONS

The intent of this study was to investigate to what extent the career choice, education, and work experience related to the level of career decision-making self-efficacy among participants in the Ventureprise business incubation program who are or are intending to become entrepreneurs. The problem addressed was that prior research on the relationship between career decision-making self-efficacy and career decision-making was inconclusive (Zhao et al., 2005). More research was needed to investigate how the entrepreneurial choice, educational background, and work experience of entrepreneurs influenced their career decision-making self-efficacy beliefs and how those beliefs effected their decision to become entrepreneurs. The extent to which education, choice to become an entrepreneur, and work experience related to the level of career decision-making self-efficacy among participants in Ventureprise business incubation program was measured. Three research questions were considered:

1. To what extent is the level of career decision-making self-efficacy different for individuals who intentionally chose entrepreneurship as a career compared to those who did not intentionally become entrepreneurs?
2. To what extent is the level of career decision-making self-efficacy different for entrepreneurs and potential entrepreneurs with different educational levels?
3. To what extent is career decision-making self-efficacy impacted by the work experience (i.e. years of experience) among entrepreneurs and potential entrepreneurs?

The theoretical framework of the research conducted was Social Cognitive Career Theory (SCCT) as it was derived from Albert Bandura's Social Cognitive Theory (1977). Bandura's Social Cognitive Theory assumes that learners can gain information from observations of others' actions and individuals can use those observations to decide how to behave. Further, the theory

proposes that the relationships between behaviors, events, and the surrounding circumstances have an impact on learning. Self-efficacy was one aspect of Social Cognitive Theory that was central to the current research. Self-efficacy is one's beliefs in their capabilities to execute actions to attain goals. With origins in social cognitive theory, self-efficacy is an individual's perceived ability to successfully accomplish tasks (Bandura, 1977).

In the current study, the researcher intended to determine if career decision-making self-efficacy was influenced by career choice, education or work experience among a group of nascent and current entrepreneurs. SCCT was important for the current research because it addressed how past experiences influence entrepreneurs (Minniti & Bygrave, 2001). A link had been established between self-efficacy beliefs and outcome expectations revealing that the higher an individual's self-efficacy, the more likely they are to achieve their goals (Lent et al., 1994). While previous findings focused on success of entrepreneurs in their ventures, the current study used career decision-making self-efficacy as the measurable characteristic that may be influenced by previous experience.

Figure 1 depicts the perceived sources of self-efficacy and outcome expectations in the context of the theoretical framework for the study. After analysis of the results, the depiction of the figure did not change. The sources of self-efficacy and outcome expectations contributed to the self-efficacy and outcome expectations of the Ventureprise entrepreneur participants within this study. Interests, therefore, lead to intentions and goals, and subsequently, to the activities that lead to attainment of goals. Success or failure experienced as individuals pursue goals leads to future self-efficacy and outcome expectations for tasks pursued. The current study could not add evidence to support the theoretical framework because of the lack of statistical significance

observed. However, even though the current study could not contribute to the theory, there were aspects of the study that could be applied in future research.

Figure 1

Sources of Self-Efficacy and Outcome Expectations

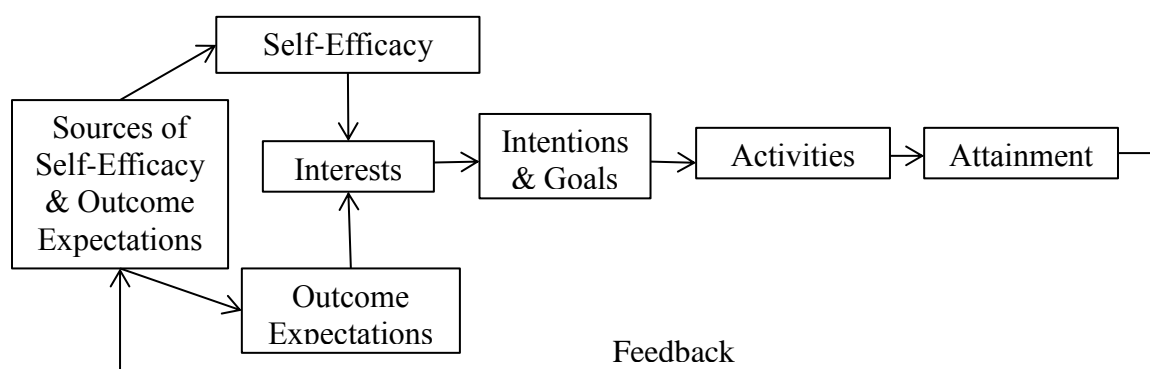


Table 1, in Chapter II, provides a summary of the literature that was reviewed with regard to the research questions addressed in this study. Some of the literature examined involved defining entrepreneurship, education and self-efficacy, work experience and self-efficacy among other topics. To address issues relating to research question one in the current study, literature was evaluated to define entrepreneurship. Other literature relating to self-efficacy and recognition of career opportunities as well as influences on entrepreneurial career choice, opportunity-driven career choice and social factors impacting career choice were also evaluated in relation to research question 1 in the current study. To investigate research question two relating to educational background, prior literature was reviewed relating to education, self-efficacy, informal education, formal education, undergraduate entrepreneurship programs, entrepreneurial performance, and entrepreneurship-focused education and career decision-making self-efficacy. Cooper and Lucas (2006) found that a significant increase in self-efficacy among university students occurred after participation in an entrepreneurship education program.

To prepare for the investigation of research question three, literature was reviewed relating to work experience and self-efficacy, the influence of past behavior on self-efficacy, work experience, and entrepreneurial career choice, type of work experience, and the initiation of entrepreneurial activities.

The examination of the literature reviewed within this study supported the research questions and supported the continuation of the study to see if results related to empirical results found in the literature. After close examination of the literature, it was determined that quantitative methods, using survey research, would be used to conduct this study. The research was conducted as a non-experimental research design, as it did not involve a manipulation of the situation, circumstances, or experience of the participants. The independent variables were the participants' choice to become an entrepreneur, educational background, and work experiences. The dependent variable was the measured level of career decision-making self-efficacy among participants. The study looked at the differences in scores on the Career Decision Making Self-Efficacy Scale Short Form (CDMSE-SF) scale scores. A target population of all active individual participants in the Charlotte Venture Challenge and the Venture Knowledge Series in the Ventureprise program was surveyed because previous studies in the literature had not used this type of population. Previous studies had used undergraduate or graduate students.

Education levels and longevity of work experience were examined and compared to participants' levels of career decision-making self-efficacy. The choice to become an entrepreneur was also examined against the levels of career decision-making self-efficacy. Findings were not statistically significant when evaluating if career decision-making self-efficacy was impacted by choice or work experience. An increase in career decision-making self-efficacy beliefs was observed among those who chose entrepreneurship as a career, but

further research is needed to confirm that career choice impacts career decision-making self-efficacy beliefs. An increase in career decision-making self-efficacy beliefs was also observed in participants who completed formal education programs. The only statistically significant finding was observed within the problem-solving subscale. Participants with completed graduate degrees had statistically significant higher mean scores on the problem solving subscale of the CDMSE-SF than those in other educational categories. No correlation between prior work experience and career decision-making self-efficacy beliefs was observed. These findings indicate a need for further research, including a larger population, adaptation to the instrument used and more robust analysis of entrepreneurial thought processes in addition to the one studied.

While the findings in this research are not intended to be inferential to all business incubators or accelerators, the findings contribute as guidance for incubator managers and workforce educators. The research methodology may be used within other business incubator populations and within university entrepreneurship preparation programs to determine career decision-making self-efficacy levels among varying demographics. Having information on career decision-making self-efficacy levels of incubator participants and those participating in entrepreneurship preparation allows managers and curriculum designers to utilize this knowledge to tailor the delivery of support programs that encourage confidence and efficacy toward their business ventures.

Conclusions

In recent years, individuals who created their own employment and sought self-directed earning opportunities have contributed to the development of economies (Ahmed et al., 2011). Entrepreneurs are innovators and seek opportunities to create new business ventures that contribute to their own financial well-being as they contribute to the surrounding economy.

Failure rates are higher for entrepreneurs at start-up, and support programs that foster growth and collaboration have shown to improve business creation and further success. It is important to understand the decision-making process of entrepreneurs and the intermediating factors that influence entrepreneurial decision making. The current study focused on one thought process, career decision-making self-efficacy, and there are other aspects of SCCT that should be examined to better understand the factors that influence entrepreneurial success.

The goal of the Ventureprise program is to facilitate entrepreneurial growth in the Charlotte region by identifying innovation-driven talent and ideas and provide entrepreneurial education, facilitate business connections, and support the launch of business ventures. Mentorship and counseling is an integral part of the support offered by the Ventureprise program to its participants. Understanding the factors that influence career decision-making self-efficacy of participants in the Ventureprise program will allow program managers to know that there are participants in their programs who have low career decision-making self-efficacy and to identify ways to increase the career decision-making self-efficacy of all participants.

All participants in this study were expected to be interested in becoming entrepreneurs due to their participation in the Ventureprise programs. Convenience sampling was used, but it is necessary to extend research on career choice beyond just a convenience sample. Finding a cluster of entrepreneurs outside of a convenience environment, like the Ventureprise program, would have taken additional time and a more complex sampling method. For example, polling membership of a Chamber of Commerce in the area would have resulted in a wide variety of businesses and business owners. While the research might have benefited from measuring career decision-making self-efficacy within a larger group, other external influences on career decision-making self-efficacy would have impacted the results and may have needed to be considered.

The current research focused on factors that influence career decision-making self-efficacy beliefs. Prior research (Hayek, 2012) concluded that there is a possibility for nascent entrepreneurs to be overly confident in their own abilities, resulting in unrealistic outcome expectations for the venture with possibly damaging results. This has implications for educators and trainers to know, not only how to encourage higher career decision-making self-efficacy beliefs, but also when to caution future entrepreneurs against unrealistic assumptions. The focus for entrepreneurship educators should be on setting realistic goals and planning the tasks necessary to complete those goals. For example, the Ventureprise program offers participants assistance with business plans as they begin their venture. This type of intervention and support is critical to start-up success. Understanding how a nascent entrepreneur perceives themselves and their environment can have implications for their start-up success.

The implications of research on career decision-making self-efficacy, as it relates to education, work experience, and choice to become an entrepreneur, are important for business incubators and accelerators. Higher levels of self-efficacy have shown to be positively correlated with high levels of job performance and greater chances for success (Brandstatter, 2011). The current research attempted to identify sources of entrepreneurial, career decision-making self-efficacy by identifying the role experience, education, and choice to become an entrepreneur have on levels of career decision-making self-efficacy. The current research contributes to entrepreneurship literature by exploring the factors that contribute to new venture start-up success and survival. Identifying potential factors that contribute to lower career decision-making self-efficacy allows program administrators to encourage career decision-making self-efficacy support. This section will detail conclusions derived from the results of the research questions analyzed.

Research Question 1: To what extent is the level of career decision-making self-efficacy different for individuals who intentionally chose entrepreneurship as a career compared to those who did not intentionally become entrepreneurs?

Overall, participants who chose entrepreneurship as a career demonstrated slightly higher overall career decision-making self-efficacy scores on the CDMSE scale than those who did not choose entrepreneurship as a career. While the results were not statistically significant, the increase in overall career decision-making self-efficacy scores for participants who chose entrepreneurship as a career was similar to observations made by Tyszka (2011) who found that opportunity-driven entrepreneurs had higher levels of career decision-making self-efficacy than necessity-driven entrepreneurs. The results also paralleled findings by Bernstein and Carayannis (2012) who found that students who chose entrepreneurship as a major had higher levels of efficacy in their abilities to be successful as entrepreneurs than those who did not choose the major.

While the findings in the current research did not show a significant relationship, the research is useful for Ventureprise program planners. Slightly higher career decision-making self-efficacy levels were observed among participants who chose entrepreneurship as a career. Participants with less career decision-making self-efficacy may have less confidence, little or no sense of personal identity, or difficulty making decisions. Combine these barriers with the fact that entrepreneurship was not their career choice (e.g. they entered entrepreneurship due to economic necessity or family inheritance) and these participants will have the greatest need for additional support. To be clear, having low career decision-making self-efficacy does not mean that an individual lacks the skills to be successful. Those who did not choose entrepreneurship as a career and whom may have lower career decision-making self-efficacy will need additional program support to overcome potential barriers. The Ventureprise program provides facilities,

helps with business model development and provides ongoing coaching and mentoring.

Additionally, Ventureprise facilitates connections between participants and businesses in the region. Especially those who did not choose entrepreneurship as a career will benefit from these connections with business leaders. The ability to exercise real-world entrepreneurial actions within the supported environment of the Ventureprise program allows for participants to develop career decision-making self-efficacy as they improve business practices. While the current research demonstrated a quantitative method of measuring Ventureprise participants' career decision-making self-efficacy, there are opportunities for additional discovery of how and why participants make the decisions using qualitative measurement methods. Program coordinators will benefit from continuous measurement of entrepreneurial career decision-making self-efficacy, from before participants enter the program until after they leave the program, to monitor career decision-making self-efficacy changes.

In the current study, career decision-making self-efficacy was not proven to have a significant impact on the choice to become an entrepreneur. While increases in career decision-making self-efficacy were higher among those who chose entrepreneurship as a career, the results were not significant. A similar finding resulted from previous research (Ahmed et al., 2011) which found that self-efficacy had no direct moderating influence on entrepreneurship intentions, and determined that external factors, such as social support, family support and public support had more direct influence on entrepreneurial intentions than self-efficacy.

In the current study, career decision-making self-efficacy was also measured within each of the five subscales of the CDMSE-SF scale to evaluate the extent to which career decision-making self-efficacy was different for those who chose entrepreneurship as a career and those

who did not. Of the five subscales, the largest differences between the scores were on the goal selection and self-appraisal subscales, however, the differences were not statistically significant.

For respondents answering the question about their choice to become an entrepreneur, the highest mean score among the five subscales obtained in the current study was in the occupational information subscale ($M=4.44$). In contrast, results previously obtained in studies leading to the development of the instrument (Taylor & Betz, 1983) showed the self-appraisal subscale yielding the highest mean scores on the CDMSE long scale form when the instrument was used in two populations of undergraduate college students.

The study conducted did not find a statistically significant difference in career decision-making self-efficacy levels measured between those participants who chose entrepreneurship as a career and those who did not intentionally seek entrepreneurship as a career choice. This contrasts with prior research which found that entrepreneurship was chosen as a career primarily because individuals had high levels of self-efficacy (Zhao et al., 2005). When compared to other variables, such as risk propensity and gender, self-efficacy has been found to be the primary antecedent for entrepreneurship as a career choice. Chen et al. (1998) also found a relationship between high levels of self-efficacy and entrepreneurial intentions. In both of these prior studies, the participants were active MBA graduate students, while the current research was conducted on participants in a business incubation program with varying levels of education completed prior to entering the program. The difference may be that the participants have self-efficacy but their career decision-making self-efficacy may not be as high as their personal self-efficacy. There is an opportunity for future research to examine personal self-efficacy versus career decision-making self-efficacy.

In summary, findings in the current study indicate that no significant differences in career decision-making self-efficacy levels existed between entrepreneurs who chose their profession and those who did not intentionally choose entrepreneurship. Because the findings were not statistically significant, no relationship was observed between entrepreneurial choice and career decision-making self-efficacy within the population studied.

Research Question 2: To what extent is the level of career decision-making self-efficacy different for entrepreneurs and potential entrepreneurs with different educational levels?

To answer this question, educational background was requested from participants based on the highest level they had completed. Education and training have been associated with the development of analytical skills, information processing, and other factors that contributed to the ability to recognize and develop new business opportunities (Alvarez-Herranz et al., 2011; Arenius & De Clercq, 2005). To answer the research question, an analysis of the variance between the sub-scales for goal selection, planning, self-appraisal, occupational information and problem solving were used. While no statistically significant differences were observed between educational backgrounds and any of the five subscales, the findings were consistent with prior research.

Other results found in the current study indicated an increase in career decision-making self-efficacy among those with a completed formal education at the bachelor's degree level or higher. Interestingly, individuals with completed degree programs exhibited higher, although not always significantly higher, levels of career decision-making self-efficacy. Only the problem-solving subscale of the CDMSE-SF resulted in a statistically significant difference between participants with completed graduate degrees and those in other categories. Educational preparation assists nascent entrepreneurs in gathering market data and disseminating information into practical forms that can be utilized in starting and managing the new enterprise.

Ventureprise is closely affiliated with the University of North Carolina at Charlotte and this relationship allows college students and graduates to network with the managers and participants in the program. This relationship may explain why more participants in the current study reporting having a completed degree and why their career decision-making self-efficacy levels were slightly higher. The networking facilitated by the Ventureprise program with the University and with regional businesses increases the likelihood that participants in the program will demonstrate confidence in their ability to complete entrepreneurial tasks.

The current study did not provide significant evidence that career choice, education level attained or work experience influenced the career decision-making self-efficacy of the population of entrepreneurs that were studied. However, the information gathered has applications in the area of entrepreneurship education. Entrepreneurship educators support those entrepreneurs seeking training and support resources to help ensure greater chances for success. Career decision-making self-efficacy is not stagnate or and can be increased through socialization between new entrepreneurs and other successful entrepreneurs. Entrepreneurs can also seek experiential training to develop their skills. Understanding career decision-making self-efficacy and entrepreneurial intentions can assist educators in developing curriculum to support hopeful entrepreneurs prior to graduation.

The current research did find subtle increases in career decision-making self-efficacy among those with completed formal degrees. Business incubators can conduct further research on participants in their programs who have little or no formal education. Measuring career decision-making self-efficacy among incoming participants into a program based on reported educational level is recommended. If career decision-making self-efficacy levels are lower for

participants without formal educational backgrounds, these participants can be offered additional support.

Arenius & De Clercq (2005) found a positive relationship between educational level and an individual's ability to recognize a new opportunity. Specifically, those with college degrees were more likely to recognize opportunities than their colleagues with lower educational levels completed. While not statistically significant, the current research did show an increase in entrepreneurial, career decision-making self-efficacy for participants with completed bachelor's degrees when compared to other participants. These findings correspond with research by Zhao, Seibert and Hills (2005) who found formal educational environments with added emphasis on entrepreneurship education increased entrepreneurial self-efficacy. In fact, formal learning environments with entrepreneurial training had the most significant affect among several external factors considered, including work experience, risk propensity and demographic variables.

Cooper and Lucas (2006) investigated the effectiveness of an educational program on the entrepreneurial self-efficacy and entrepreneurial intention. Their findings were that a significant increase in self-efficacy among university students occurred after participation in an entrepreneurship education program. Research from Cooper and Lucas (2006) may suggest that career decision-making self-efficacy is improved after participation in programs like Ventureprise. This study surveyed participants who are currently enrolled in the program. Future research might include a follow-up study among entrepreneurs after their involvement in Ventureprise.

In summary, findings indicate that no significant differences in career decision-making self-efficacy levels existed between participants with different educational backgrounds with the

exception of a statistically significant difference within the problem-solving subscale between those with completed graduate degrees and those in other categories. Other differences were observed among those with completed bachelor or masters degrees, but not enough difference existed to confirm the relationship. Because the findings were not statistically significant, no relationship existed between levels of educational background and overall career decision-making self-efficacy within the population studied.

Research Question 3: To what extent is career decision-making self-efficacy impacted by the work experience (i.e. years of experience) among entrepreneurs and potential entrepreneurs?

Results of the correlation analyses indicated a weak correlation between years of work experience and career decision-making self-efficacy in all five sub-scale scores observed. Prior research (Forbes, 2005) suggested that further analysis was needed on the antecedents to higher self-efficacy. Unfortunately, the current research could not add evidence to prove that work experience was related to of career decision-making self-efficacy. As Forbes (2005) observed, entrepreneurs are not homogeneous and their traits are different, not only because of their backgrounds, but also because of their thought processes. While Forbes anticipated that prior experience would influence self-efficacy among entrepreneurs, the current research could not confirm this idea. Entrepreneurial self-efficacy has been shown to be influenced by prior work experience and by education, especially formal entrepreneurship education (Zhao et al., 2005).

Arenius and De Clercq (2005) found no significant relationship between employment statuses prior to a venture start-up, but did find that networking and other human capital had an impact on opportunity recognition. The current study surveyed nascent and current entrepreneurs to determine if their prior work experience influenced their career decision-making self-efficacy as entrepreneurs. The sample differs in age and experience levels from research by

Peterman and Kennedy (2003) who investigated self-efficacy among high school students entering a business skills education program. Their findings found that students with prior work experience had higher levels of self-efficacy and benefited more from the educational program. Such contrast from the current study's findings may indicate that age and stage of life determine the extent to which career decision-making self-efficacy can be affected by experience. It is possible that younger populations may benefit more from programs that increase career decision-making self-efficacy beliefs for entrepreneurs and other workers. The current study did not analyze measure career decision-making self-efficacy scores among the various age groups collected. Age and stage of life may impact career decision-making self-efficacy beliefs and this is an opportunity for further research.

Findings from this study indicate no correlation between previous work experience and entrepreneurial, career decision-making self-efficacy. The current study considered ethnic background as an independent variable, but did not consider socioeconomic variables. The current study was small in scope compared to the worldwide population of entrepreneurs. A more broad approach to the research was conducted by Alvarez-Harranz, Martinez-Ruiz and Valencia De Lara (2011) who investigated work experience and its influence on entrepreneurship across 22 countries throughout the world. Their study concluded that entrepreneurs demonstrated higher efficacy levels as a direct result of their previous work experience. Further research on this topic could benefit from a larger sample and target population.

Research has shown that previous work experience influences entrepreneurs' self-efficacy as they learn from their successes and failures on the job. Prior work has focused on the cognitive process and decision-making of entrepreneurs (Baron, 2004; Minniti & Bygrave, 2001) and implies that prior experience, especially previous success, was proposed to improve

knowledge base. However, results in the current study could not statistically confirm the impact of work experience on decision-making self-efficacy beliefs. The Ventureprise program provides a network of support, including business connections in industry, office space, and additional services to help start-up businesses grow and be successful. These support systems are ideal for growth of an enterprise and may moderate the need for previous work experience. More research is needed to model various types of work experience and the impact of measured career decision-making self-efficacy among Ventureprise participants.

In summary, findings indicate that no significant relationship exists between career decision-making self-efficacy levels and the longevity of previous work experience. Because the findings were not statistically significant, the no relationship existed between years of work experience and measured levels of career decision-making self-efficacy could within the population studied.

Recommendations and Future Research

Limiting the potential participants to those involved with the Ventureprise program may have limited the number of responses. Future research should consider one or more larger programs with similar characteristics. Additionally, more creative methods should be employed to increase the response rate of the participants. For example, increase response would have been possible if the survey had been administered at a recent competition where participants in the Ventureprise program were in attendance.

The current research did not take into consideration the type of prior education or type of work experience each participant received. Limiting research to the level of education and years of experience among workers leaves an opportunity for future research to consider how the qualitative characteristics of previous education and work experience influence career decision-

making self-efficacy. Prior research has focused on formal education and found that structured educational programs do improve the likelihood of entrepreneurial intentions and success (Zhao et al., 2005).

The current study used one instrument to measure career decision-making self-efficacy beliefs. Bandura (2012) recognized that levels of efficacy were varied across facets within an activity domain which made measuring self-efficacy difficult with a single instrument. Recognizing that human beings exist in difference spheres of activity, Bandura theorized that people would differ in areas of self-efficacy and the level of which they would achieve. The current study is limited because it used one instrument and future research might benefit from more varied self-efficacy measurement instrumentation.

The purpose of this study was to investigate to what extent the education, choice to become an entrepreneur, and work experience relates to the level of career decision-making self-efficacy among participants in Ventureprise business incubation program who are or are intending to become entrepreneurs. Entrepreneurial choice, education, and longevity of work experience were examined. Career decision-making self-efficacy was not significantly impacted by these motivational factors among the population studied. The results of the current study suggested that the relationship between career choice, educational background, and work experience to, career decision-making entrepreneurial, career decision-making self-efficacy were not straight-forward. While limitations existed in the current research, prior research suggested that entrepreneurial, career decision-making self-efficacy would be significantly impacted by one or more of the motivational factors studied. These findings suggest that further research is needed. The following list of recommendations for future investigation was determined after consideration of the current study's results:

1. The current study surveyed participants who are currently enrolled in the Ventureprise program. The Ventureprise program facilitates networking between community entrepreneurs and program participants. Through these relationships, trust is enhanced and nascent entrepreneurs are more likely to act upon an opportunity (Bergh et al., 2012). Building trust within these networks further enhances their effectiveness. Based on the current research, networking with business founders in similar types of organizations may enhance nascent entrepreneurs trust and career decision-making self-efficacy as they navigate new ventures. Future research might include a follow-up study among entrepreneurs after their involvement in Ventureprise. Conducting a study exclusively on those who have completed the program would provide information on career decision-making self-efficacy beliefs after the Ventureprise program's completion.
2. Prior research suggested that career decision-making self-efficacy is improved after participation in programs like Ventureprise. Additionally, conducting a similar study on participants in an entrepreneurship certificate program offered to undergraduate students at the University of North Carolina at Charlotte would provide comparison data for the Ventureprise program managers. Again, career decision-making self-efficacy beliefs could be measured at program start and completion.
3. Further research could consider multiple larger business incubation and accelerator programs. Entrepreneurs are likely very different depending on the area of the country, or even the world, within which they participate in start-up ventures. Having a larger, more diverse population of nascent entrepreneurs would reveal other external factors that influence career decision-making self-efficacy beliefs.

4. The current study did not take into consideration the type of prior education each participant received. Limiting research to the categorical level of education among workers leaves an opportunity for future research to consider how the qualitative characteristics of previous education influence career decision-making self-efficacy. Prior research has focused on formal education and found that structured educational programs do improve the likelihood of entrepreneurial intentions and success (Zhao et al., 2005).
5. The current study did not take into consideration the type of work experience each participant received. Limiting research to the number of years of work experience among workers leaves an opportunity for future research to consider how the qualitative characteristics of previous work experience influence career decision-making self-efficacy. An opportunity exists for further research to examine the type of work experience and the environment surrounding prior work and its influence on entrepreneurial opportunity recognition and career decision-making self-efficacy beliefs.
6. The current research study sought to measure career decision-making self-efficacy among current and nascent entrepreneurs. Using a sample of current and nascent entrepreneurs has limitations, especially when measuring the thought processes relating to their decision to become entrepreneurs. Many of the entrepreneurs in the current research sample have already begun their business ventures. This means that any measurement of their self-efficacy would be based on feelings they had prior to making their career choices (McGee et al., 2009). The CDMSE-SF scale has been adapted and used among high school students and nascent entrepreneurs, but there are aspects of the instrument that seem directed toward college students. Most of the early research conducted during

instrument development was applied to populations at universities. There were specific questions on the CDMSE-SF inventory regarding choosing a college major, for example, and these questions were misleading to participants who had been in the workforce for a number of years. While the instrument demonstrated reliability in this and other studies, it will be useful in future research for an adaptation to be developed, and further research to be conducted, using the CDMSE-SF scale on nascent and experienced entrepreneurial populations.

7. As described in chapter one, research is needed to understand factors that influence entrepreneurial self-efficacy. Implied in previous research, is that intervention is needed to increase self-efficacy beliefs in hopes that the entrepreneur will be more likely to be successful. However, further research is needed to understand the control beliefs of entrepreneurs beyond just career decision-making self-efficacy. A better understanding is needed about how an entrepreneur perceives their environment including risk perceptions, financial resilience and control beliefs (Hayek, 2012). Future research should seek to measure career decision-making self-efficacy beliefs along with the entrepreneur's risk assessment and control beliefs. These thought processes will provide information to business incubators and educators about when to encourage an entrepreneur to move forward with an idea and when to moderate their intentions.
8. Bandura (2012) asserted that self-efficacy is only one aspect of social-cognitive theory. Bandura cautioned that other aspects should also be measured such as goal systems, outcome expectations, perceptions of the environment, and identifying potential obstacles. The current study also focused on career decision-making self-efficacy measurement within the Ventureprise population. A more comprehensive study should

be planned which would include measurement of these other factors involved in social-cognitive theory. The level of career decision-making self-efficacy beliefs may relate to entrepreneurial behavior or success, but there could also be other aspects of the entrepreneur's personality that had more of an impact. Bandura (2012) offered an example of a drug taken to prevent heart attacks. A more holistic research project would dissect which ingredients in the drug had the greatest impact on the outcome. Therefore, future research is recommended that will not only measure career decision-making self-efficacy, but also measure the entrepreneur's ability to set goals, impact outcomes, perceive their environment, and identify obstacles to success.

9. The current research focused on a population of entrepreneurs. Future research should consider non-entrepreneurs' career decision-making self-efficacy compared to the career decision-making self-efficacy of entrepreneurs. Some research has shown that business founders have higher self-efficacy than non-founders. A similar study was conducted on a population of entrepreneurs and non-entrepreneurs in Poland (Tyszka et al., 2011) and determined that entrepreneurs had higher levels of self-efficacy than non-entrepreneurs. Applying this research methodology to the population studied in the current research and a population of workers in non-entrepreneurial roles within the region could reveal useful information for the business incubator.
10. Future research could apply the research methodology used in this study to compare students in an undergraduate entrepreneurship certificate program to measure career decision-making self-efficacy compared to other non-entrepreneurial undergraduates. Thus, analyzing the career decision-making self-efficacy of students in entrepreneurial training compared to those in a business degree program. Interesting data on workforce

training from both areas may yield valuable information for workforce education and business incubation.

Applicability of the CDMSE-SF Scale

The researcher chose the CDMSE Scale Short Form to measure the degree of confidence that an individual believes they can be successful at performing tasks necessary to make career decisions. These career decisions include the choice to become an entrepreneur and the decisions made regularly to maintain successful ventures. As outlined in previous chapters, early applications of the CDMSE scale (and the short form) were used on college students and some adaptations were made for middle school students (Betz and Luzzo, 1996). Taylor and Betz (1983) investigated groups of college students to observe the influence of self-efficacy on career decision-making. Their research applied Bandura's (1977) self-efficacy theory to career decision making. Using the career decision-making self-efficacy (CDMSE) model, research revealed that college students' career decision-making self-efficacy correlated with their ability to make career decisions. Students with high levels of self-efficacy had little or no issue making career decisions. In contrast, students showing a lack of structure or confidence had difficulty making career decisions or avoided such decisions (Taylor & Betz, 1983). This study was significant because it provided a foundation for interventions that would encourage higher levels of career decision-making self-efficacy.

The current research study sought to apply the instrument and measure career decision-making self-efficacy among current and nascent entrepreneurs. An adaptation of the CDMSE-SF instrument is needed to better measure career decision-making self-efficacy among nascent and practicing entrepreneurs. There were specific questions on the CDMSE-SF inventory regarding choosing a college major, for example, and these questions were misleading to

participants who had been in the workforce for a number of years. One respondent to the survey replied, “This poll is clearly directed at students. You shouldn’t send it to non-students.” All of the participants in the current study had at least some college coursework in their background, but might perceive a question about college major to be inapplicable to their situation, thereby limiting the ability for them to give a calculable answer. It may also have contributed to the low response rate. While the instrument demonstrated reliability in this and other studies, it will be necessary in future research of entrepreneurs for an adaptation to be developed.

Use of the CDMSE-SF scale in the current research was useful in collecting quantitative measurements of entrepreneurial, career decision-making self-efficacy. However, based on the lack of statistical significance in the current study, the researcher suggests that quantitative measurement alone is not enough to present a clear picture of entrepreneurial intentions and thought processes. Qualitative data such as behaviors, feelings, and opinions collected at various times throughout the stages of entrepreneurship would provide a more robust data collection in future research. Thoughts and behaviors of those participating in a program like the Ventureprise program may be very different from those experienced by practicing entrepreneurs outside of the program. The CDMSE-SF scale is applicable for use with practicing entrepreneurs, but would be more valuable if used to measure career decision-making self-efficacy at various stages. Therefore, a longitudinal study using the CDMSE-SF scale with measurement across the venture life cycle would provide Ventureprise and other incubation program managers with more valuable data.

The 25 items on the CDMSE-SF scale were distributed among the five sub-scales of the instrument. The sub-scales were self-appraisal, occupational information, goal selection, planning, and problem solving. Self-appraisal referred to an individual’s ability to determine

their own strengths and shortcomings. The interpretations of these self-assessments relate directly to career decision-making self-efficacy. Occupational information referred to the perceived career options and one's own perceived ability to explore those options. The goal selection subscale placed emphasis on setting goals and having the capacity to adjust goals when failures and successes occur. The planning subscale referenced to ability to look ahead to future needs and plan for possible barriers or situations. Finally, the problem-solving subscale detailed the perception that an individual can deal with unexpected problems and find practical resolutions.

The current research observed slight differences between sub-scales within each of the analyses conducted for the three research questions. However, none of these differences were considered statistically significant. It was determined that a larger sample size would be needed to fully evaluate the usability of the instrument and determine if the five subscales could each be measured on a sample of existing and nascent entrepreneurs.

Betz and Luzzo (1996) concluded that adequate reliability of the CDMSE scale was demonstrated (both the long and short forms) and recommended the use of the CDMSE scale in future research. Prior research (Betz et al., 1996) also measured reliability for the 25-item CDMSE-SF scale which ranged from .73 to .83 for the 5-item subscales with a total reliability of .94 overall for the 25-item scale. The current study measured the five subscales of the instrument as ranging from .93 to .95.

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APPENDIX A: DEMOGRAPHIC SURVEY ITEMS

1. What is your gender?
 1. Male
 2. Female
2. What is your ethnicity?
 1. Non-Resident Alien
 2. Unknown
 3. Hispanic
 4. Native American
 5. Asian
 6. African American
 7. Pacific Islander
 8. Caucasian
 9. Multiple Races
 10. Unknown
3. What is your age range?
 1. 18-22
 2. 23-29
 3. 30-39
 4. 40-49
 5. 50 and over
4. What is the highest level of education you've completed?
 1. Less than high school or GED
 2. High school diploma or GED
 3. High school diploma with workplace (on-the-job) training from an employer
 4. Some trade school courses/sessions completed (no certification)
 5. Completed trade school program or certification
 6. Some 2-year college courses
 7. Completed 2-year degree or equivalent
 8. Some 4-year college courses
 9. Completed bachelor's degree
 10. Some graduate school courses
 11. Completed graduate degree
 12. Other training not mentioned

5. Was it your choice to pursue entrepreneurship as a career?

1. Yes
2. No
3. Not Applicable

6. How many years of work experience do you have?

APPENDIX B: INFORMED CONSENT LETTER

Investigator(s):

Researcher(s):

Name Melissa Sisco

Faculty Advisor's Name Claretha Hughes, Ph.D.,
Faculty Advisor

University of Arkansas

College of Education and Health Prof.

Department of Department of RHRC

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Ro Windwalker, CIP

IRB Coordinator

Office of Research Compliance

210 Administration Building

University of Arkansas

Fayetteville, AR 72701

479-575-2208

irb@uark.edu

April 14, 2014

Dear Colleague,

I am conducting a research project entitled "Entrepreneurial Self Efficacy: Examining the effects of Education and Work Experience" as a requirement for my doctoral degree at the University of Arkansas. The purpose of this quantitative study will be to investigate to what extent the educational and work experience influences the level of self-efficacy among entrepreneurs or those intending to become entrepreneurs. I am requesting your participation as an active participant in the Ventureprise program.

I realize that your time is valuable and have attempted to keep the requested information as brief and concise as possible. It will take no more than 30 minutes of your time. Your participation could add value by acquiring additional knowledge on factors that influence entrepreneurial success.

Your consent is implied by the completion of the questionnaire, participation in this project is voluntary, and you may stop participating at any time during the survey without consequence. There are no known risks to you for participating in this study. Responses will be recorded anonymously, and the information collected will be kept confidential to the extent allowed by law and by University policy. Please assist me in my research by completing the survey at the enclosed link by June 15, 2014. Thank you for your time and assistance.

Sincerely,

Melissa Sisco

APPENDIX C: CDMSE-SF SCALE DISCLOSURE

For use by Melissa Sisco only. Received from Mind Garden, Inc. on April 23, 2014

For Dissertation and Thesis Appendices:

You cannot include an entire instrument in your thesis or dissertation, however you can use up to five sample items. Academic committees understand the requirements of copyright and are satisfied with sample items for appendices and tables. For customers needing permission to reproduce five sample items in a proposal, thesis, or dissertation the following page includes the permission form and reference information needed to satisfy the requirements of an academic committee.

Putting Mind Garden Instruments on the Web:

If your research uses a Web form, you will need to meet Mind Garden's requirements by following the procedure described at <http://www.mindgarden.com/how.htm#instrumentweb>.

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APPENDIX D: CDMSE-SF SCALE SAMPLE

For use by Melissa Sisco only. Received from Mind Garden, Inc. on April 23, 2014

Score: _____

Please provide the following information:

Name or I.D. _____

Date _____ Age _____ Gender (Please Circle): **F** **M**

Career Decision Self-Efficacy Scale Short Form

INSTRUCTIONS: For each statement below, please read carefully and indicate how much confidence you have that you could accomplish each of these tasks by marking your answer according to the following 5-point continuum. Mark your answer by filling in the correct circle on the answer sheet.

Example:

No Confidence at All	Very Little Confidence	Moderate Confidence	Much Confidence	Complete Confidence
1	2	3	4	5

How Much Confidence Do You Have That You Could:

- | | 1 | 2 | 3 | 4 | 5 |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. Use the internet to find information about occupations that interest you. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 2. Select one major from a list of potential majors you are considering. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. Make a plan of your goals for the next five years. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Source:

Nancy E. Betz and Karen M. Taylor
 Career Decision Self-efficacy Scale Instrument and Scoring Guide.
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APPENDIX E: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER



Office of Research Compliance
Institutional Review Board

April 22, 2014

MEMORANDUM

TO: Melissa Sisco
Claretha Hughes

FROM: Ro Windwalker
IRB Coordinator

RE: New Protocol Approval

IRB Protocol #: 14-04-684

Protocol Title: *Entrepreneurial Self Efficacy: Examining the Effects of Education and Work Experience*

Review Type: ☒ EXEMPT ☐ EXPEDITED ☐ FULL IRB

Approved Project Period: Start Date: 04/22/2014 Expiration Date: 04/21/2015

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (<http://vpred.uark.edu/210.php>). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

This protocol has been approved for 560 participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior* to implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or irb@uark.edu.

210 Administration Building • 1 University of Arkansas • Fayetteville, AR 72701
Voice (479) 575-2208 • Fax (479) 575-3846 • Email irb@uark.edu

The University of Arkansas is an equal opportunity/affirmative action institution.

APPENDIX F: LETTER OF PERMISSION TO USE CDMSE-SF SCALE

For use by Melissa Sisco only. Received from Mind Garden, Inc. on April 23, 2014



www.mindgarden.com

To whom it may concern,

This letter is to grant permission for the above named person to use the following copyright material for his/her research:

Instrument: ***Career Decision Self-Efficacy Scale***

Authors: ***Nancy E. Betz and Karen M. Taylor***

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Three sample items from this instrument may be reproduced for inclusion in a proposal, thesis, or dissertation.

The entire instrument may not be included or reproduced at any time in any published material.

Sincerely,

Robert Most
Mind Garden, Inc.
www.mindgarden.com

APPENDIX G: ONLINE USAGE AGREEMENT FOR CDMSE-SF SCALE



Melissa Sisco <m*****@email.uark.edu>

Re: MGAgree: Career Decision Self-Efficacy Scale from Melissa Sisco (Order # 27258)

Mind Garden <*. . . .@mindgarden.com>

Thu, Apr 24, 2014 at 1:31 PM

To: Melissa Sisco <m*****@uark.edu>

Hello Melissa,

Thank you for your order and for completing the Online Use Agreement. Please feel free to proceed with your survey.

Best,

Katherine
Mind Garden, Inc.

On Thu, Apr 24, 2014 at 10:04 AM, <m*****@uark.edu> wrote:

Message-Id: <*****CD66A02CF@web016.mivamerchant.net>

Date: Thu, 24 Apr 2014 12:54:26 -0400 (EDT)

Name: Melissa Sisco

Email address: m***** uark.edu

Phone number: ***-***-8238

Company/Institution: University of Arkansas

Order/Invoice number: 27258

Order Date: 04/23/2014

Project Title: Entrepreneurial Self Efficacy: Examining the effects of Education and Work Experience

Instrument Name: Career Decision Self-Efficacy Scale

I will compensate Mind Garden, Inc. for every use of this online form.

I will put the instrument copyright on every page containing question items from this instrument.

I will remove this form from online at the conclusion of my data collection.

Once the number of administrations reaches the number purchased, I will purchase additional licenses or the survey will be closed to use.

The form will not be available to the open Web.

Ideal research practice involves knowing who is responding to my survey, although this is not always possible. I understand that Mind Garden recommends, but does not require, a unique login and password for every respondent. CAUTION: If I decide not to require a unique login for each respondent, the survey method I use may elicit a large number of responses to my survey. If the response count gets out of my control, I am responsible for compensating Mind Garden for every administration, regardless of circumstances.

I will include i***@mindgarden.com on my list of survey respondents so that Mind Garden can verify the proper use of the instrument.

I will not send Mind Garden instruments in the text of an email or as a PDF file to participants.

The outside online survey website I will be using and how I plan to put this instrument online:

Qualtrics will be used to administer this survey. I will only be sending the link to the survey to a specific group of participants which will number less than or equal to 560. I will be re-typing the items into the Qualtrics survey system. No one will be able to access the survey except the respondents and the survey administrator.

Electronically signed on 04/24/2014 by Melissa Sisco.

--

Mind Garden, Inc.

i***@mindgarden.com

APPENDIX H: INVOICE FOR PURCHASE OF CDMSE-SF SCALE USAGE

 **mind garden.com**



Menlo Park, CA 94025
Invoice

DATE	INVOICE #
4/23/2014	27258

BILL TO	SHIP TO
Melissa Sisco 	Melissa Sisco 

PAID
04/23/2014

P.O. NUMBER	TERMS	DUE DATE	REP	SHIP	VIA
	Credit Card	4/23/2014	KB	4/23/2014	PDF

ITEM CODE	DESCRIPTION	QUANTITY	PRICE EACH	AMOUNT
CDSE-License	CDSE Reproduction License	560	0.70	392.00
	CA Sales tax		8.25%	0.00
	Customer Phone			
				
	Customer E-mail			
				
Total USD				\$392.00
Thank you for your business.				
Payments/Credits				-\$392.00
Balance Due				\$0.00



APPENDIX I: REVIEW OF SURVEY BY MIND GARDEN



Melissa Sisco <m*****@email.uark.edu>

Response from Mind Garden - Melissa Sisco - Ventureprise Program Participant Survey -
copyright needs to be included on CDSE

Mind Garden <i*****@mindgarden.com>

Mon, May 19, 2014 at 8:38 PM

To: Melissa Sisco <m*****@uark.edu>

Hello Melissa,

Thank you for sending the online link for our review of your survey which includes the Career Decision Self-Efficacy (CDSE short form) instrument.

Upon review, please note:

1. The copyright for the CDSE must be referenced on the survey page where the CDSE items are. The copyright for the CDSE is:

CDSE, Copyright © 2012 by Nancy E. Betz and Karen M. Taylor.

All rights reserved in all media.

Published by Mind Garden, Inc., www.mindgarden.com

2. If you want to identify/delete the data from the survey I completed, I answered the first response to each question (should be easy to identify).

Otherwise, all looked great.

Wishing you much success with your research.

Best regards,

Chris

Mind Garden, Inc.

On Tue, May 13, 2014 at 4:52 AM, Melissa Sisco <m*****@uark.edu> wrote:

Dear Colleague,

I am conducting a research project entitled "Entrepreneurial Self Efficacy: Examining the effects of Education and Work Experience" as a requirement for my doctoral degree at the

University of Arkansas. The purpose of this quantitative study will be to investigate to what extent the educational and work experience influences the level of self-efficacy among entrepreneurs or those intending to become entrepreneurs. I am requesting your participation as an active participant in the Ventureprise program.

I realize that your time is valuable and have attempted to keep the requested information as brief and concise as possible. It will take no more than 30 minutes of your time. Your participation could add value by acquiring additional knowledge on factors that influence entrepreneurial success.

Your consent is implied by the completion of the questionnaire, participation in this project is voluntary, and you may stop participating at any time during the survey without consequence. There are no known risks to you for participating in this study. Responses will be recorded anonymously, and the information collected will be kept confidential to the extent allowed by law and by University policy. Please assist me in my research by completing the survey at the enclosed link by June 15, 2014. Thank you for your time and assistance.

Follow this link to the Survey:
Take the Survey

Sincerely,

Melissa Sisco
m*****@uark.edu

Follow the link to opt out of future emails:
Click here to unsubscribe

--

Mind Garden, Inc.
i***@mindgarden.com

APPENDIX J: RESUME

Education

Doctorate of Education (In Progress)	Expected Completion December 2014
Workforce Development Education	Fayetteville, Arkansas
The University of Arkansas	
Master of Science, College Student Personnel	2007
Arkansas Tech University	Russellville, Arkansas
Bachelor of Arts, English	1997
The University of Central Arkansas	Conway, Arkansas

Work Experience

The University of North Carolina at Charlotte	Charlotte, North Carolina
Business and Technology Applications Analyst	2013 - Present

- Develop, design and/or support applications for the business, research, and/or instructional functions of University constituents.
- Identify efficient methods of creating and distributing summary and drill-down data reports for Institutional Research constituents using WebFOCUS and other electronic media.
- Assist in the design and implement the integration of the office's individual databases into a single relational database containing the most critical data at defined points of time for historical reporting and assessment by administrators and staff campus-wide.
- Merge, compile, edit, verify, and set up the data (using appropriate formats that include SAS, WebFOCUS, MS Access, or Excel) for both internal and external reports that are either coordinated or produced by the IR Office.
- Generate data files or summary data reports and cross-tabulations with breakdowns, as appropriate, to department or other unit levels. Write WebFOCUS or SAS code and other programming statements to produce regularly scheduled and ad hoc reports. Maintain accurate and thorough documentation that details sources and procedures used in compiling and reporting data.
- Assist other Institutional Research staff in the editing of the data files required by UNC General Administration. Designing programs that will check for common errors in the data and, when necessary, correct the data.
- Resolve routine and some non-routine problems. Spot trends in reoccurring problems and takes action to prevent future occurrences. Make suggestions for technical modifications to prevent future problems
- Assist in researching, evaluating, testing, and implementing new or updated software and hardware technologies for the Office of Institutional Research. Provide the office staff with the necessary training in using new technology.
- Work with the entire office in the preparation of the state mandated reports.

Work Experience (Continued)

- | | |
|--|---|
| <p>The University of North Carolina at Charlotte
Associate Director for Financial Aid Systems</p> | <p>Charlotte, North Carolina
2011 - Present</p> |
| <ul style="list-style-type: none"> • Develop, monitor, test, and enhance the Banner Financial Aid module to administer student financial aid for approximately 40,000 applicants each year. • Develop and improve automated processes needed to respond to the continually changing rules, regulations, and procedures of the federal and state financial aid programs. • Oversee and coordinate technical updates, enhancements, and corrective issues including communication with the Information and Technology Services staff, Ellucian, and other agencies. • Test all patches and upgrades and new programs and monitor the implementation of such updates into the production system. • Supervise the Systems Unit which consists of four staff members and also serve as a member of a five-person management team in developing policies and procedures used to administer all financial aid programs at the institution. • Maintain technical knowledge of abilities and limitations of computer processes. | |
| <p>The University of Arkansas Community College at Batesville
Director of Financial Aid</p> | <p>Batesville, Arkansas
2008-2011</p> |
| <ul style="list-style-type: none"> • Plan, administer and deliver all federal, state and institutional financial aid programs for UACCB. • Manage budgets for the financial aid office as well as student assistance programs. • Counsel students with special financial or personal circumstances to help maximize their eligibility for federal grant assistance. • Manage all state scholarship programs to ensure proper delivery of state funds. Maintain thorough knowledge of all state and federal regulations concerning student financial aid. • Work closely with administrators, directors, division chairs, faculty and students to deliver financial aid in an efficient manner while meeting all institutional, state and federal regulations. • Work closely with the Division of Finance and Administration to ensure proper disbursement and reconciliation of funds. Maintain effective communication with students to ensure timely delivery of student financial assistance. | |
| <p>The University of Arkansas Community College at Batesville
Assistant Director of Financial Aid</p> | <p>Batesville, Arkansas
2005-2008</p> |
| <ul style="list-style-type: none"> • Determine financial needs of students, based on FAFSA information, and prepare financial aid packages such as loans, grants and scholarships and answer any questions. • Assist in the development of policies and procedures concerning awards. • Prepare various reports. • Design and maintain the website for the Financial Aid Office. • Monitor processing of awards and verify application information. | |

Work Experience (Continued)

- Maintain knowledge of all state and federal regulations concerning student financial aid.
- Check financial aid packages before mailing award letters to students.
- Coordinate maintenance of files on students receiving financial assistance.
- Perform research and collect data for the application of funds and filing of reports.
- Review student requests for award adjustments and consider special circumstances for awards.
- Maintain productive working relationships with students, the general public and institution personnel.
- Conduct financial aid presentations at area high schools.

The University of Arkansas Community College at Batesville Batesville, Arkansas
Adjunct Instructor 2008-2010

- Instructed basic and intermediate Microsoft Excel courses to employees of area businesses.
- Conducted online instruction for first-year college students focusing on study skills, time management and budgeting.

Professional and Community Involvement

Rookie of the Year Award (2011) Arkansas Association of Student Financial Aid Administrators

Banner Functional Management Team, UNC Charlotte

- Chair (2013-present)
- Secretary (2012-2013)

North Carolina Association of Student Financial Aid Administrators

- Member (2011-Present)

University of Arkansas Community College at Batesville

- Staff Senate President (2010)
- Staff Senate Vice-President (2009)
- Chancellor's Advisory Committee (2009-2010)
- Datatel Operations Research Committee (2010-2011)

Arkansas Association of Student Financial Aid Administrators

- Executive Board Member (2009-2011)
- Two-Year College Representative (2009-2011)
- Member (2005-2011)

Batesville, Arkansas Rotary Club

- Member (2004 - 2009)
- Public Relations Officer and Board Member (2006-2009)